Patient and doctor satisfaction with medical consultations.

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PATIENT AND DOCTOR SATISFACTION

WITH MEDICAL CONSULTATIONS

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Thesis submitted for the Degree of Doctor of Philosophy (Ph.D.)

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Abstract

The aims of this thesis are to describe the association between patient variables, doctor variables and the outcomes of consultations, to evaluate the effectiveness of three methods designed to improve patient satisfaction and, to examine the impact upon both patients and doctors of improving patient satisfaction.

The thesis reviews the literature examining the methods used to assess patient and doctor satisfaction, the psychometric properties of the scales, the variables associated with patient and doctor satisfaction and, models of patient satisfaction. These reviews suggest that: a uni-dimensional scale may provide an adequate assessment of patient satisfaction; patient satisfaction is strongly associated with patient age and that cognitive variables are associated with doctor satisfaction.

Following the literature reviews, a new questionnaire to assess patient satisfaction is developed and shown to be reliable and valid. Some of the variables associated with patient and doctor satisfaction are explored in two different outpatient clinics. Patient satisfaction in both studies was high. An intervention based on current ideas in the literature was developed which should encourage patients to ask questions. It was hypothesised that patients would thereby gain more information, which would increase patient satisfaction.

Satisfaction with the consultation was higher in patients whose expectations were met or who were older. Satisfaction was higher in doctors who perceived higher levels of

comprehension in their patients and whose patients reported higher satisfaction. Self-efficacy about asking questions did increase for women but the experimental interventions did not make patients ask more questions. Three months after the consultation, patients in the intervention groups report higher levels of satisfaction.

The results provide some support for models of patient satisfaction that include patient expectations. With regard to doctor satisfaction, future studies should explore how doctors make judgements on the level of patient comprehension. The intervention study suggests that changing patient behaviour requires a more powerful intervention, which should be based on more robust theoretical psychological models of behaviour change and patient satisfaction.

TABLE OF CONTENTS

SECTION 4: DESCRIPTIVE STUDIES

SECTION 6: CONCLUSION

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACKNOWLEDGEMENTS

In the time it has taken to complete this piece of work I have come across many people who deserve my thanks - and they know who they are. A few people will however, be selected for special mention:

My supervisor, Theresa Marteau, for her wisdom, encouragement and energy.

My boss, Chris McManus, for his invaluable assistance on statistical matters when it really mattered.

The MRC/North Thames Research and Development fund for funding the final, experimental study with a grant awarded to myself, Theresa Marteau and Stephen Robinson with whom the study was designed and implemented.

All my participants, patients and doctors, who spent some of their own valuable time completing questionnaires.

Finally, there are the many friends and colleagues who with empathy and encouragement have kept me going when my own energy ebbed.

Chapter 1

Patient and doctor satisfaction with medical consultations

1.1 Introduction

This thesis explores patient and doctor satisfaction with medical consultations and examines possible predictors of satisfaction with medical consultations.

The value of assessing patient satisfaction has been questioned as a contribution to understanding how patients anticipate and respond to medical encounters (Fitzpatrick and Hopkins, 1983). Concerns have also been expressed about the validity of results from studies assessing patient satisfaction (Lebow, 1974). First, initial research on patient satisfaction concentrated on examining the dimensional structure of the concept and were not theory based. Second, the processes which led to expressions of satisfaction or dissatisfaction were not investigated (Locker and Dunt, 1978).

Today patient satisfaction is perceived as a legitimate area of research as satisfaction has been shown to be associated with better health outcome (Greenfield et al, 1985, Hall, Roter & Katz, 1988, Wilkin, Hallam & Doggert, 1992). An understanding of the processes in a consultation which are associated with satisfaction has provided evidence for the strengths and weaknesses of different consultation styles which can guide the training of health professionals to increase patient satisfaction.

Numerous studies have examined variables which may predict patient satisfaction with a

particular medical encounter (Korsch, Gozzi & Francis, 1968, Vuori et al ,1972, Korsch and Negrette, 1972, Bertakis, 1977, DiMatteo and Hays, 1980, Weinberger, Greene & Mamlin, 1981, Linder-Pelz, 1982b, Bartlett et al, 1984, Linder-Pelz and Struening, 1985, Like and Zyzanski, 1987, Matthews and Feinstein, 1989, Bertakis, Roter & Putnam, 1991, Winefield and Murrell, 1991). Many studies report a positive association between patient satisfaction with a specific consultation and subsequent adherence (Korsch and Negrette, 1972, Kincey, Bradshaw & Ley, 1975, Roter, 1977, Woolley et al, 1978}, Fitzpatrick and Hopkins, 1981, DiMatteo, Hays & Prince, 1986, Burgoon et al, 1987, Ley, 1989, Hazzard, Hutchinson, & Krawiecki, 1990, Sherbourne et al, 1992). The direction of this relationship however is unclear (Inui and Carter, 1985, Hall, Roter & Katz, 1988, Stiles, 1989, Pendleton, 1992). There have been few studies designed to increase patient satisfaction and explore the impact such change has on patient behaviour (Zastowny, Roghmann & Cafferata, 1989, Thompson, Nanni & Schwankovsky, 1990, Lewis, Pantell & Sharp, 1991, Rost et al, 1991).

Another neglected area in this field is the impact doctors may have on patient satisfaction, either through their behaviour in the consultation, their attitudes, or their own level of satisfaction with consultations (Weinberger, Greene & Mamlin, 1981, Rashid et al, 1989, Marteau and Johnston, 1990, Winefield and Murrell, 1991, Suchman, Roter, Green, Lipkin and The Collaborative Study Group of the American Academy on Physician and Patient, 1993).

This thesis examines patient satisfaction with the consultation both as an outcome, to determine what influences satisfaction, and as a predictor, to determine how it affects

subsequent health status.

1.2 Aims

This thesis has three aims:

(a) to describe the association between patient and doctor variables and patient satisfaction with consultations.

(b) to describe the association between patient and doctor satisfaction and patient behaviour.

(c) to evaluate the effectiveness of three methods designed to improve patient satisfaction by empowering patients.

1.3 Outline of Thesis

This thesis is divided into six sections. The initial section sets the context of the thesis and describes the requirements for a reliable and valid measure of patient satisfaction with a specific consultation.

Section two examines patient satisfaction. It initially examines measures that have been developed to assess patient satisfaction with a particular encounter and then reports a literature review of dimensions of patient satisfaction and variables associated with patient satisfaction. The fourth chapter in this section looks at models of patient satisfaction. The final chapter in this section reports on the development of a measure of patient satisfaction with a medical encounter.

The third section examines doctor satisfaction. Chapter seven examines how doctor

satisfaction has been assessed, concentrating on satisfaction with a particular consultation, and Chapter eight presents a literature review of the variables associated with doctor satisfaction.

Section four reports on two descriptive studies. These studies were carried out in an acute and a chronic care setting. Chapter nine describes patient satisfaction in an antenatal clinic and Chapter ten examines patient satisfaction in a dermatology clinic. Associations between variables are explored, and the data examined to determine the relative importance of input and process variables for patient and doctor satisfaction. In Chapter eleven the results of these two studies are compared with the results of the earlier literature reviews.

Section five describes the background, methodology and results of an experimental study designed to evaluate the effectiveness of three patient-focussed interventions. Chapter 12 reviews the results of interventions that have been used to enhance patient satisfaction with medical consultations. The targets of these interventions have been students, patients and doctors. Chapter 13 describes the methodology for a patient-focussed intervention study . The last chapter in this section, Chapter 14, reports the impact of the interventions on patient participation in the consultation, patient and doctor satisfaction with the consultation, and patient health status. The results and implications of the study are discussed. Section six, Chapter 15, presents the conclusions of the thesis.

The steps in the research design are outlined in Appendix one.

Chapter 2

Measuring patient and doctor satisfaction: psychometric considerations

2.1 Introduction

Patient satisfaction as an indicator of the success of a medical consultation has been evaluated by health services researchers for many years. Chapter 1 described the reasons for the popularity of this measure. This chapter explores the properties of any well constructed measure before investigating issues relating to the assessment of satisfaction and drawing some conclusions. In general if a measure is unreliable, then validity will also be low. Any valid measure will by definition be reliable, but a measure can be extremely reliable but not valid.

2.2 Reliability

The reliability of a measure refers to the extent to which the measure produces the same score for the same individual under similar circumstances. It is a test of consistency and is assessed by determining the reliability coefficient of a test. This is a correlation coefficient which expresses the degree of relationship between two sets of scores. Perfect reliability would produce a correlation coefficient of 1.00.

Two methods are available to examine reliability: test-retest reliability and internal reliability.

2.2.1 Test-retest reliability

This is a method of testing the reliability of a measure by administering it to the same people on more than one occasion. A coefficient of reliability can then be calculated between the scores on each occasion. The Pearson product-moment correlation (Pearson's r) is the most commonly used correlation index. The time between administration of the tests will vary from days to weeks or months. If the conditions under which the measure is administered remain the same, and the phenomenon under study is assumed not to have changed, a low correlation between the scores suggests that the measure is not reliable. Two other interpretations for a measure having low reliability are possible: patients may have changed the way in which they perceive the measurement scale used or they may have changed the meaning attached to the scale (Norman and Parker, 1996).

2.2.2 Internal reliability

Internal reliability can be assessed in several ways, but can only be used with multi-item questionnaires.

One method of assessing internal reliability is to examine split-half reliability. The test being evaluated is divided into two forms and a coefficient of reliability between the two obtained. The two halves of a test may be produced in several ways: odd-numbered items may be compared with even-numbered items; the first-half of a questionnaire may be compared to the second half; or, items may be randomly assigned to one or other form of the questionnaire.

Cronbach's coefficient alpha (Cronbach, 1951) is the most commonly used statistic for assessing internal reliability and can be used to assess the reliability of the overall scale, each subscale or each item within the scale. The meaning of different levels of reliability are provided by Landis and Koch (1977). They describe coefficients of reliability in the following ways: a coefficient of less than 0.20 is slight, between 0.21 and 0.40 it is fair, a coefficient between 0.41 and 0.60 is described as moderate, between 0.61 and 0.80 it is described as substantial and between 0.81 and 1.00 the description is almost perfect reliability. Carmines and Zeller (1979) suggested that well used scales should gain alpha values in excess of 0.8 and Kline (1993) has suggested that a coefficient of reliability has to be 0.70 or above to be acceptable.

2.3 Validity

Validity refers to the extent to which a test measures what it purports to measure. Validity is usually a matter of degree rather than an all-or-none property. There are four primary types of validity: face, content, construct and criterion validity.

2.3.1 Face validity

Face validity refers to the appearance of a measure to those who will complete it. Face validity examines whether or not the items within a test appear to be asking questions relevant to the purpose of the test. If a test has face validity those taking the test perceive it to be measuring what they have been told it is measuring.

2.3.2 Content validity

Content validity refers to the individual test items and the extent to which they represent

the construct under examination. Each item can be evaluated to determine whether it is appropriate to the test. It is also necessary to examine the measure as a whole to determine whether there is an overall balance to it, and if there is cohesiveness between test items so that all tested aspects are represented appropriately. Establishing content validity is a largely subjective operation involving judgements of "experts" concerning the relevance of the material used.

One method which helps to ensure good content validity is to interview individuals from the target population and ask them open-ended questions to determine the important areas of concern. The questionnaire or interview schedule can then be developed to include items corresponding to the subject areas that have been cited most frequently by the respondents.

2.3.3 Construct validity

Construct validity is a form of content validity. It evaluates the validity of a testing instrument based on the degree to which the test items capture the hypothetical qualities or trait it was designed to measure. One of the main methods of assessing construct validity is through the use of principle components or factor analysis. Constructs in measures of patient satisfaction with a consultation include: convenience, doctor conduct, and technical competence.

2.3.4 Criterion validity

Criterion validity, also known as external or empirical validity, determines the extent of the relationship between a new measure and some independent criterion. Two types of

criterion validity are concurrent and predictive validity.

Concurrent validity

There are two ways of examining concurrent validity. Test item scores are correlated with some previously validated criterion measure to establish a validity coefficient. In some circumstances it is possible and appropriate to compare the scores with actual performance. An item assessing concurrent validity might be "How does this visit compare with previous visits?" (Ware and Hays, 1988)

Predictive validity

Predictive validity assesses the extent to which scores on the measure being developed predict overt behaviour. There is an implicit requirement that, while the scale is under construction, it is possible to predict how scores on a scale will covary with behaviour. An example of an item of predictive validity is "How much do you intend to adhere to the doctor's recommendations?". To have predictive validity a significant positive correlation would be expected between such an item and the satisfaction scale being assessed.

Related to both content and construct validity are the issues of specificity and sensitivity. Specificity is the ability of any measure to identify correctly different populations of participants. A test of satisfaction for example with good specificity should discriminate between those participants experiencing a high level of satisfaction and those experiencing a low level of satisfaction. The sensitivity score of a measure tells us about the accuracy of the measure in detecting changes in a participant's satisfaction.

2.3.5 Validity and satisfaction with medical consultations

Validating any measure of satisfaction is difficult. Satisfaction is a psychological state or attitude, not a behaviour. It is therefore necessary to try to validate the measure in the absence of direct measures of satisfaction or of agreed-upon satisfaction criteria. Attempting to assess validity is also problematic due to the lack of well-specified theory and the lack of knowledge about the results to be expected from a valid measure of satisfaction. Construct validity requires a definition of the construct and a plausible theoretical explanation for a test measuring what it claims to. For satisfaction these are typically not given.

When questionnaires were first developed to assess patient and doctor satisfaction it was not possible to establish a priori what possible associations there were between satisfaction with a medical consultation and future behaviour. Now that it has been established that, for patients, there is an association between satisfaction with medical consultations and returning to see the doctor again and adhering to instructions and treatment recommendations, such behaviour can be used as an indicator of predictive validity. If during the development of a questionnaire there is insufficient resources to assess actual behaviour it is possible to ask questions which examine behavioural intention. While intention is second best to a measure of actual behaviour, nonetheless intention is a reliable predictor of behaviour (Davidson and Jaccard, 1975, Fishbein, 1982, Manstead, Proffitt & Smart, 1983, Seydel et al, 1990, Connor and Norman, 1994, Norman and Smith, 1995).

2.4 Type of assessment

This refers to the options of giving respondents a questionnaire to complete or interviewing them about their views of the consultation. There is little empirical evidence to suggest that one method of data collection is superior to the other. Fitzpatrick (1991) discusses the possible advantages of each method (see Table 2.1).

Interviews may allow an interviewer to be sensitive to patients' concerns, to pick up cues from, and to develop rapport with, the patient. Developing rapport can be useful if it encourages patients to remain in studies in which they are being interviewed on more than one occasion. An interview may also provide flexibility in the order and depth to which topics are covered. It may also provide an opportunity for both interviewers and interviewees to clarify ambiguities and check understanding.

Self-completed questionnaires may ensure that all respondents are given the same question with no additional information being provided which may alter the emphasis. However different people may construe questionnaires and interpret the same written question in different ways with no opportunity to correct misinterpretation. Self-completed questionnaires may also prevent interviewer bias, whether intentional or not, from influencing the results. Anonymous self-completed questionnaires increase confidentiality which may encourage respondents to provide less socially desirable responses. Another advantage of self-completed questionnaires is that they require less extensive training for staff and reduce the cost of data gathering. When comparing oral and questionnaire administration of an instrument designed to assess satisfaction, LeVois, Nguyen and Attkinson (1981) reported that, with other aspects of administration kept constant, oral

administration increased the satisfaction rating by 10%. The decision to use one or both methods of data collection will reflect the research question as well as the resources available to the research team.

Table 2.1 Proposed advantages of two methods of assessing patient satisfaction

Advantages of interviews:

Sensitivity to patients' concerns

Flexibility in covering topics

Development of rapport (may encourage future participation)

Ability to clarify ambiguities of items

Ability to probe reasons for views

Advantages of self-completed questionnaires:

Standardisation of items

No "interviewer bias"

Anonymity

Increased confidentiality (may encourage completion)

Less need for trained staff

Low cost of data gathering

Less likely to generate socially desirable responses

Takes less time to complete

If a standardised questionnaire is used there is the possibility of comparison with data produced in other research

from Fitzpatrick (1991)

2.5 Item generation

The items generated in a questionnaire will influence its dimensional structure. Two approaches are commonly used. Items are generated either to correspond to pre-set dimensions of patient satisfaction or on the understanding that any dimensions will be detected by factor analysis or principle components analysis and this procedure will determine to which dimension, if any, each item belongs.

2.6 Response scales

2.6.1 Number of response categories

The type of response scale used to assess satisfaction may influence the answers. There is little agreement about the best number of categories to have in a response scale. It can be postulated that too few categories such as satisfied versus dissatisfied, or agree versus disagree will not produce a sensitive scale while too many categories may make it difficult for participants to discriminate between shades of meaning. Nunnally (1967) looked at the impact of the number of response alternatives and found that the reliability of items increases as the number of response alternatives increase although the gain in reliability with more then seven response categories is minimal.

In an attempt to establish some empirical basis for the use of a particular response scale Ware and Hays (1988) compared two methods for measuring patient satisfaction with specific medical encounters. Patients in the USA were randomly assigned to complete questionnaires with either a six-item response format or a five-item response format, using different anchors. The six-item response scale asked questions in the format "How satisfied are you with the technical quality of the visit?". Patients responded by indicating

whether they were extremely satisfied, very satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, or very dissatisfied. Patients given the five-item response scale were asked "How would you rate the technical quality of this visit?" They responded to a five point scale labelled excellent, very good, good, fair, and poor. To compare the two methods on response variability, reliability and validity, the scores from both scales were transformed to a common 0 - 100 scale. Responses to the two scales were then compared on four satisfaction dimensions.

The mean score obtained using the five-item scale was significantly lower than that obtained using the six-item scale for one dimension. There were no significant differences between the two formats for the other three dimensions or for the total score.

Both response scales produced satisfactory estimates of internal reliability; the alpha reliability coefficient ranged from 0.87 to 0.93 for the scales. Skewness and kurtosis of the two scales were comparable. The five-item scale gave significantly more response variability than the six-item response scale on each of the four satisfaction constructs. There was evidence of validity for both rating methods. The five-item format produced significantly higher correlations with validity variables than did the six-item format.

Ware and Hays concluded that both methods were adequate for measuring patient satisfaction with specific visits but that visit-specific satisfaction scales based on the five-item response format tended to be superior in terms of lower mean scores, greater response variability, and higher correlations with behavioural intentions.

2.6.2 Labelling

A difficulty with Ware and Hays (1988) conclusion is that while they varied the number of items in the response scale they also changed the labels attached to the scales. The six-item scale was explicitly labelled with regard to satisfaction and dissatisfaction. The five-item response scale does not mention satisfaction only implying it from the labels of excellent, very good, and good. Thus an individual may rate the technical quality as excellent while not considering it satisfactory for them.

2.7 Response bias

Four types of bias are found in response to questionnaires. An acquiescent response set describes a tendency to agree with statements of opinion regardless of content. Alternatively respondents may tend to disagree with statements regardless of content, exhibiting an opposition response set. A third type of bias exhibited by participants is a socially desirable response set: respondents give the answer that they think the doctor or researcher wants to hear. Respondents may also respond with a central tendency, being reluctant to use extreme categories of a scale (Lydeard, 1991).

Regardless of the wording of the items response bias may also be induced by lengthy questionnaires. If respondents perceive that they have a lot of questions to answer they may begin to respond by ticking the same box, whether it is the one on the left-hand side, the right-hand side or down the middle, regardless of the content of the items.

2.8 Readability

The level of literacy in a general population of patients may be over-estimated by

questionnaire designers. If patients cannot read and understand the language used in the questionnaire, then adherence will be low, items may be left unanswered, and respondents may get other people to complete the forms for them.

Several assessment methods are available to determine the readability of written information (Klare, 1969). Formulae for four of them are presented in Table 2.2: Reading Ease Score, Reading Grade Score, Fog Index, SMOG Grading. One of the most popular methods of assessing readability is the Reading Ease Score (Flesch, 1948). This score provides information on the percentage of people in the United States who would understand the particular text and the IQ required for comprehending it. Another index of readability closely related to Flesch's Reading Ease Score is the FOG index (Gunning, 1952). This provides information on the reading grade level required for understanding the material. The Dale-Chall formula (Reading Grade Score) for adult materials was published in 1948 and, along with the Flesch Reading Ease Score, is one of the most frequently used formulae for assessing readability. It incorporates a list of 3,000 familiar words as part of the formula and was one of the most accurate general-purpose formulae available. The SMOG Grade (McLaughlin, 1969) provides a score indicating the level of education required for comprehension of the article being read. The SMOG formula is widely used in analysing health literature and is a quick and easy method for estimating readability (Meade and Byrd, 1989). While it would be difficult to assess questionnaires for reading ease, this literature suggests ways to improve comprehension such as the use of short words (with few syllables) and short sentences.

When considering the use of questionnaires it is important to bear in mind that many

questionnaires have been developed in America and American-English can be difficult for English speakers in the UK to understand.

Table 2.2 Readability formulae

1. Flesch Formula (Reading Ease Score) (1948)

Systematically select 100-word samples from the material to be rated;
Determine the number of syllables per 100 words (wl)
Determine the average number of words per sentence (sl)
Apply the following reading ease equation:

Reading Ease = 206.835 - 0.846wl - 1.015sl

An interpretation of Reading Ease Scores is given by Ley (1973) and Baker and Taub (1983)

Score	% who would understand*	IQ required for comprehension*	Level of difficulty**
0 - 30	4.5	126+	Extremely difficult
31 - 50	24	111+	
51 - 60	40	104+	
61 - 70	75	90+	Standard reading range^
71 - 80	80	87+	
81 - 90	86	84+	
91 - 100	90	81+	Extremely easy

* Ley
** Baker and Taub
^ for general American population

2. Dale-Chall Formula (1948)

Select 100-word samples throughout the material to be rated;
Compute the average sentence length in words (X2)
Compute the percentage of words outside the Dale list of 3000 (X1)

Reading Grade Score =0.1579 X1 + 0.0496 X2 + 3.6365

The Reading Grade Score represents the score required by a pupil who would be able to answer correctly one-half of the test questions on a passage.

Table 2.2 continued

3. Fog Index (Gunning, 1952)

Take systematic samples of 100 words;
Divide number of words by number of sentences to get sentence length;
Count the number of words of three or more syllables (with certain exceptions) to get percentage of hard words.

Fog Index = Total of the two factors above multiplied by 0.4.

The Fog Index represents the reading grade level required for understanding the material.

4. SMOG Grading (McLaughlin, 1969)

Count 10 consecutive sentences near the beginning of the text to be assessed, 10 in the middle and 10 near the end.
In the 30 selected sentence count every word of three or more syllables.
Estimate the square root of the number of polysyllables.

SMOG Grade = 3 + approximate square root

Grades 13 - 16 indicated the need for college education, 17 - 18 the Need for graduate training, and 19 and above, the need for higher Professional qualification.

The SMOG Score and Degree of Difficulty of Certain Publications (United States Department of Health and Human Services, 1981).

SMOG Grade	Typical Magazine	Degree of Difficulty
6 - 7	Comic	Very easy
8	Pulp fiction	Easy
9 - 10	Reader's Digest	Average
11 - 13	Atlantic Monthly	Fairly difficult
14 - 16	Academic Magazines	Difficult
17+	Scientific professional magazines	Very difficult

Another issue to consider relates to aspects of the individuals completing the questionnaire. Three characteristics of individuals will prevent them from completing questionnaires and hence reduce the representativeness of the sample obtained:

i) Illiteracy

ii) Inability to speak English (Non-English speakers)

iii) Visual impairment.

Visual impairment may be a problem for older people and people with diseases that affect eyesight, such as diabetes or glaucoma (Gilmer et al, 1993).

2.9 Layout of the questionnaire

Layout can affect the completion of a questionnaire. If the layout of the questionnaire is complex or unclear, the quality of the data declines, (Wright, 1980). Not only may patients misunderstand what is required, they may also fail to complete some sections of a questionnaire.

2.10 Order effects

Ware and Hays (1988) reported that less favourable scores and larger response variation were achieved when satisfaction items were placed after all other items measuring aspects of the visit. It therefore seems that encouraging patients to reflect on their visit, even briefly, influences their satisfaction with a specific medical encounter. This result suggests a strategy for reducing skewness of satisfaction ratings, that is to enquire about specific aspects of a visit before asking patients to evaluate it.

2.11 Responsivity

A difficulty for both self-completed questionnaires and interviews is that the process of completing the questionnaire or being interviewed may change the construct being measured. It has been demonstrated, while examining symptom suggestibility, that getting participants to recall a specific symptom from the past magnifies its perceived intensity in the present (Skelton, Loveland & Yeagley, 1996). The cognitive, behavioural and social effects of expressing somatic experiences are discussed by Cioffi (1996). This suggests that responsivity may influence the assessment of reliability.

2.12 Conclusion

Future research in this area should assess the effects of labelling and response formats both independently and together on satisfaction scores.

It is possible to summarise the components of a well designed satisfaction questionnaire. To maximise response variability evidence to date suggests that, a measure of patient or doctor satisfaction with a particular medical consultation should be designed as a questionnaire containing items that refer directly to the specific consultation using a five-item response scale. Satisfaction items should be placed after other items asking about the specific service or consultation being evaluated. To lessen the effects of response bias, the questionnaire should consist of a balanced and relatively brief mix of positively and negatively worded items in words that all patients can understand. The questionnaire should be printed clearly and well laid out. With these aspects addressed it is then necessary to provide evidence of reliability and validity.

The next chapter examines questionnaires that have been developed to assess patient satisfaction.

Chapter 3

Measures of patient satisfaction: a review

3.1 Introduction

Patient satisfaction has often been described as multi-dimensional, and taxonomies comprising from four to 22 dimensions have been proposed (Ware and Snyder, 1975, Ware, Davies-Avery & Stewart, 1978, Pascoe, 1983, Hall and Dornan, 1988, Fitzpatrick, 1991. Higher order factors or content areas of satisfaction with medical care have also been proposed (Hulka et al, 1970, Ben-Sira, 1976). As outlined in Chapter 1 the focus of this thesis is patient and doctor satisfaction with a specific medical encounter. This chapter will therefore consider dimensions of patient satisfaction in this context.

3.2 Literature review

The studies selected for review were identified through searches on two databases. The Medline database was searched from 1966 until 1994 and the Psychological Abstracts database from 1984 until 1994. Key words used were patient satisfaction, dimensions, scale development, and questionnaire.

Twenty-two papers concerned with developing questionnaires on patient satisfaction were found covering the years from 1968 to 1993. Five of these papers are not concerned with patient satisfaction with a specific medical encounter and hence are excluded (Risser, 1975, Roter, Hall & Katz, 1987, Johnson et al, 1988, Evans, Stanley & Burrows, 1992, Avis, Bond & Arthur, 1995). Three questionnaires, discussed in more than one paper,

are included just once, leaving a total of 14 questionnaires to be reviewed.

Table 3.1 summarises the information from the 14 studies in relation to the dimensional structure of patient satisfaction and the issues raised in Chapter 2.

Table 3.1 Studies reporting the development of questionnaires assessing patient satisfaction with medical consultations 1968 - 1993

Key: NR - Not reported X - Some information provided NA - Not applicable

	Korsch, Gozzi and Francis 1968 **USA**	**Vuori, Aaku, Aine, Erkko and Johansson 1972** **Finland**	**Noyes Levy, Chase and Udry 1974** **USA**
Number of Dimensions	One	Three Instrumental Communication Expressive	None 6 single questions
Reliability	NR	NR	NR
Validity	NR	NR	NR
Where assessment carried out	At home	At home	In clinic
How long after appointment	14 days later	NR	Immediately
Type of assessment	Semi-structured interview	Questionnaire by post	Interview and questionnaire
Response Scale	NA	Close-ended	5 point
Response Bias	NA	NR	NR
Readability	NA	NR	NR
Layout	NA	NR	NR
Placement of Items	NR	NR	NR
Patient type	Mothers of paediatric patients 100% women	Primary ambulatory care Gender - NR	First visit Obstetric/gynaecology and family planning 100% women
Number of participants	800 patients 64 doctors	330 patients Doctors - NR	121 patients Doctors - NR

Table 3.1 continued

	Wolf, Putnam, James and Stiles 1978 USA	Woolley, Kane, Hughes and Wright 1978 USA	DiMatteo and Hays 1980 USA
Number of Dimensions	Three Cognitive Behavioural Affective	Two Satisfaction with care Satisfaction with outcome	Four General satisfaction Communicate Affective Technical
Reliability	Cognitive α= 0.87 Behavioural α = 0.87 Affective α = 0.86 Total α = 0.93	NR	General satisfaction α= 0.76 Communicate α= 0.75 Affective α= 0.79 Technical α= 0.65 Total α= 0.92 Test-retest (n=24) General satisfaction 0.60 Communicate 0.66 Affective 0.39 Technical 0.11 Total 0.63
Validity	Content	NR	NR
Where assessment carried out	NR	At home	In clinic
How long after appointment	Immediately	1 month later	Immediately
Type of assessment	Questionnaire	Interview or questionnaire	Questionnaire
Response Scale	Likert	Yes/No	Likert scale: 5-point
Response Bias	Most items worded positively	NR	14 items reversed
Readability	NR	NR	NR
Layout	NR	NR	NR
Placement of Items	NR	NR	NR
Patient type	Adult screening clinic Student health clinic A mix of first and follow-up visits 58% women	Family and community medicine First visit for an acute problem Gender - NR	Family practice First and follow-up visits 75% women
Number of participants	Adults - 85 Students - 65 Doctors - NR	1761 patients Doctors - NR	155 patients Doctors - NR

Table 3.1 continued

	Linder-Pelz and Struening 1985 **USA**	**Feletti, Firman and Sanson-Fisher 1986** **Australia**	**Ware and Hays 1988** **USA**
Number of Dimensions	Three Doctor conduct Convenience General satisfaction	Ten hypothesised Factor analysis constructed 14 with eigen values > 1.0 Chose five "which appeared substantial and distinctive." Communication, care and reassurance Professional attitude and behaviour Personal confidant of patient Technical competence Generating trust in physician	Four General satisfaction Technical care Interpersonal care Office waiting time
Reliability	Doctor conduct $\alpha = 0.82$ Convenience $\alpha = 0.52$ General satisfaction $\alpha = 0.77$	NR	General satisfaction $\alpha = 0.86$ Technical care $\alpha = 0.94$ Interpersonal care α 0.82 Office waiting time $\alpha = 0.78$ Total $\alpha = 0.89$
Validity	NR	Construct	X
Where assessment carried out	In clinic	At home, reply paid envelopes provided	In clinic
How long after appointment	Immediately	Within 24 hours and visited at home if not returned within 3 days	Immediately
Type of assessment	Questionnaire	Questionnaire by post	Questionnaire
Response Scale	5 response choice	Likert scale: 6-point	5 point scale excellent to poor
Response Bias	A mix of positively and negative worded items	Roughly equal numbers of positively and negatively worded items	X
Readability	NR	NR	NR
Layout	NR	NR	NR
Placement of Items	NR	NR	X
Patient type	Primary care clinics First visits 66% women	Primary care patients with new medical complaint 66% women	Internal medicine (n=121) Medical specialities (n=124) Surgical specialities (n=118) First and follow-up visits. Saw nurse/doctor or both 59% women
Number of participants	155 patients Doctors - NR	501 patients 22 doctors	363 patients Doctors - NR

Table 3.1 continued

	Shiloh, Avdor and Goodman 1990 Israel	Baker 1990 UK	Bowman, Herndon, Sharp and Dignan 1992 USA (Falvo and Smith 1983)
Number of Dimensions	Three Instrumental Affective-Instrumental Procedural	Three Professional care Depth of relationship Perceived time General satisfaction	One
Reliability	Instrumental α = 0.79 Affective-Instrumental α = 0.74 Procedural α = 0.65	Professional care α 0.87 Depth of relationship α 0.83 Perceived time α 0.82 General satisfaction α 0.67 Complete questionnaire α 0.91	α= 0.99 Test-retest r = 0.45 P = 0.00
Validity	Construct Content	Construct Content	Criterion
Where assessment carried out	In clinic	In clinic	Clinic or home
How long after appointment	Immediately	Immediately	Immediately or next day
Type of assessment	Questionnaire	Questionnaire	Questionnaire
Response Scale	4 point scale	Likert scale: 5-point	Likert scale: 5-point
Response Bias	NR	X	X
Readability	NR	X	NR
Layout	NR	NR	NR
Placement of Items	NR	NR	X
Patient type	Genetic counselling (n=76) Parents of paediatric outpatients (n=56) First visit and follow-up 70% women	General practice Not reported if first or subsequent visit Gender - 0	Primary care 70% women
Number of participants	132 patients Doctors - NR	239 patients 8 doctors	90 patients Doctors - NR

Table 3.1 continued

	Hill , Bird, Hopkins, Lawton and Wright 1992 UK	Anderson and Zimmerman 1993 USA (McCaul, Glasgow and Schafer, 1987)
Number of Dimensions	Five Provision of information Empathy to the patient Attitude to the patient Access to continuity with care giver Technical competence	One
Reliability	Provision of information α= 0.93 Empathy to the patient α= 0.87 Attitude to the patient α= 0.71 Access to continuity with care giver α= 0.84 Technical competence α= 0.88 Total α = 0.96 Test-retest (n=14) Total = 0.83	α = 0.80
Validity	NR	NR
Where assessment carried out	NR	At home or office
How long after appointment	NR	Within 3 days of consultation
Type of assessment	Questionnaire	Questionnaire by telephone
Response Scale	Likert scale: 5-point	Likert scale: 6-point
Response Bias	X	NR
Readability	NR	NR
Layout	NR	NR
Placement of Items	NR	NR
Patient type	Rheumatology At least 3 previous visits 81% women	Diabetic outpatients 0% women
Number of participants	119 patients Doctors - NR	134 patients 12 doctors

3.3 Patient satisfaction: definitions

Most of the studies explain why patient satisfaction is important but only three provide a definition of the concept. One defines it as "a judgement of the quality of care" but does not explore how this judgement is formed (Baker, 1990). A second study is more explicit and defines patient satisfaction as "multiple evaluations of distinct aspects of health care which are determined by the individual's perceptions, attitudes and comparison processes" (Linder-Pelz and Struening, 1985). A third study measured patient satisfaction as a function of expectation fulfilment (Noyes et al, 1974). This study does not explore whether it is expectations of ideal care or "good-enough" care that is the important criterion.

3.4 Item generation and selection

3.4.1 Item generation

Authors generated items using two approaches: i) to correspond to pre-set dimensions of patient satisfaction (Korsch, Gozzi & Francis, 1968, Korsch and Negrette, 1972, Vuori et al, 1972, Noyes et al ,1974, Wolf et al, 1978, Woolley et al, 1978, DiMatteo and Hays, 1980, Linder-Pelz and Struening, 1985, Feletti, Firman & Sanson-Fisher, 1986, Ware and Hays, 1988, Shiloh, Avdor and Goodman, 1990) or ii) with no pre-set dimensions, the existence of possible dimensions being detected by factor analysis or principle components analysis (Baker, 1990). A sub-group of studies using the first methodology involve selection of dimensions and items from previously developed questionnaires. Bowman and colleagues (1992) examined the psychometric properties of a questionnaire originally developed and reported, with little information on reliability and validity, by Falvo and Smith (1983). Hill and colleagues (1992) chose their items from three previously

validated satisfaction questionnaires and Anderson and Zimmerman (1993) took their items from a questionnaire developed by McCaul, Glasgow and Schafer (1987).

Although two approaches underpin the generation of items for patient satisfaction questionnaires, the methods used are the same. The three most commonly used methods are to select items from a number of pre-existing questionnaires, elicit patients' views on what is important for them in an encounter with a doctor or to select items from one previously developed questionnaire. The most comprehensive methodologies for item generation included all of these components.

3.4.2 Item selection

Seven studies provide no information on the selection of items for the final versions of patient satisfaction questionnaires (Korsch, Gozzi and Francis, 1968, Vuori et al, 1972, Noyes et al, 1974, Woolley et al, 1978, DiMatteo and Hays, 1980, Ware and Hays, 1988, Anderson and Zimmerman, 1993). The other seven studies present varying amounts of information on the selection of patient satisfaction questionnaire items with very detailed protocols for selection of items described by Wolf and colleagues (1978), Linder-Pelz and Struening (1985) and Baker (1990).

3.5 Scale construction - dimensions and psychometric properties

3.5.1 Identification of dimensions

The study by Noyes and colleagues was not designed to identify dimensions of patient satisfaction (1974). Korsch, Gozzi and Francis (1968), Bowman and colleagues (1992) and Anderson and Zimmerman (1993) assumed satisfaction to be unidimensional. Five

studies that assess dimensions of patient satisfaction provide little or no information on how these dimensions were identified Vouri and colleagues (1972), Woolley and colleagues (1978), DiMatteo and Hays (1980), Ware and Hays (1988) and Hill and colleagues (1992).

Five studies provide information on the dimensional structure of their patient satisfaction questionnaires. Wolf and colleagues (1978) provide some information on the structure of their dimensions and although some difficulties were noted with the items in the dimensions, the original structure was not altered. The four remaining studies used information provided by factor analysis either to reduce the number of dimensions or to move items from one dimension to another.

In the earlier studies, investigators were reluctant to alter the dimensions when data analysis demonstrated that a different structure was more appropriate (Wolf et al, 1978). More recently, with the exception of Hill and colleagues (1992), researchers have been more willing to re-examine the dimensional structure of their scales and to alter them when analysis suggests a different solution.

Some studies examine the amount of variance accounted for by the dimensions. This is presented in the context of either the total scale from which the dimension was drawn or a separate scale included in some studies, frequently labelled general satisfaction. Added together the dimensions account for around 40% of the variance in the total scales. This suggests that the studies have not identified variables or dimensions that are best able to predict patient satisfaction. The only occasion when this was exceeded was in Shiloh,

Avdor and Goodmans' (1990) examination of general satisfaction in genetic counsellees, where 72% of the variance was accounted for by seven items. They reported that a single item (How satisfied are you with the information you got in counselling?) accounted for more than half (45%) of this variance. When that item was combined with the item "Did the doctor meet your expectations of him?" together they accounted for 53% of the variance of general satisfaction. The dimensions themselves explained only an additional 8% of the variance.

3.5.2 Psychometric properties

Reliability

Five studies provide no information on reliability (see Table 3.1). For one study this is a function of their questionnaire design. Noyes and colleagues, 1974 calculated a satisfaction score for each participant based on the level of concordance between expected and experienced scores on each of six variables.

Internal consistency, in the form of Cronbach's alpha co-efficient of reliability is the most frequently assessed form of reliability. The results from the Cronbach's alpha statistic suggests that for the majority of dimensions identified in each of the studies, internal consistency is more than 0.70. Five of the six studies reporting Cronbach's alpha co-efficient of reliability for the total scale as well as for the dimensions, report that it is higher for the total scale than for the separate dimensions, reflecting the larger number of items in the total scale.

Test-retest reliability was reported in three studies. DiMatteo and Hays (1980) reported

that dimensions were found to vary in reliability over time with the communication and general satisfaction dimensions being most reliable over time. The test-retest reliabilities were very low for the technical dimension (0.11) and the affective dimension (0.39) and higher for general satisfaction (0.60) and the communication dimension (0.66). For the total scale the test-retest reliability was 0.63 which compares favourably with that of the unidimensional scale described by Bowman and colleagues (1992) with a reported test-retest reliability of 0.45. Hill and colleagues (1992) reported test-retest reliability for their total scale as 0.83.

Validity

Validity is most often explored in the context of the dimensions and whether they represent separate constructs. At first sight the results of principal components analysis suggest that patient satisfaction encompasses a number of different dimensions. More detailed examination of how the dimensions are constructed suggest that this is not the case. Items are frequently generated in accordance with some preconceived notion of what dimensions are important for patient satisfaction, therefore preempting the results of any factor analysis.

When correlations between different dimensions are examined most studies report intercorrelations in the range from 0.50 to 0.76. This suggests that there is substantial overlap among the dimensions of satisfaction. High interdimensional correlations may result from imprecise definitions of components, from other faults of measurement, or from a common attitude toward consultations which contributes to the attitude scores in each dimension. Such a significant common factor suggests that it would be appropriate

to treat the items as one scale. In a later development of their questionnaire, Wolf and Stiles (1981) reported that they considered the whole scale as a satisfaction instrument and did not divide it into component parts.

An issue that has seldom been addressed is the purpose of identifying dimensions of patient satisfaction. Only one group of investigators attempted to relate the different dimensions of patient satisfaction to processes in the interview (Stiles et al, 1979b). They reported that different process components of a consultation were associated with different dimensions of patient satisfaction. Seven types of verbal exchanges were examined. Two were associated with dimensions of patient satisfaction. Affective satisfaction was significantly correlated with patients telling their stories in their own words during the history taking part of the interview. Cognitive satisfaction was significantly associated with doctors giving information in the concluding part of the interview.

It may be that dimensions of patient satisfaction predict different aspects of patient behaviour. Currently it is not known whether a particular dimension of satisfaction or whether general satisfaction, reflecting all components, has the strongest association with the longer term outcomes associated with patient satisfaction.

Face validity is not discussed by the studies. The assumption may be that the type of questions, together with the response scales used, provide face validity to the individuals completing the questionnaires. In a similar way, as the studies have reported, the quite rigorous methods of generating items for satisfaction questionnaires suggests content

validity.

3.6 Factor labelling and interpretation

In the 9 studies describing dimensions of patient satisfaction, 22 labels were used to name 33 dimensions. The terms 'factor', 'dimension' and 'subscale' are often used interchangeably in the studies. The labels 'general satisfaction' and 'technical satisfaction' were attached to dimensions in four studies. In three studies the same label was used: affective satisfaction. Instrumental satisfaction, satisfaction with communication and satisfaction with professional attitudes and behaviour were labels that were each used in two studies (see Table 3.1 for details).

Baker (1990) acknowledged that his "professional" factor had similar content to the cognitive and behavioural factors of Wolf and colleagues' work. By labelling it differently he points out that while content of dimensions may be very similar, labels will vary from study to study. This reflects the insular view usually taken when labelling dimensions.

3.7 Conclusions

When patient satisfaction is studied it is seldom defined, its theoretical structure is not examined, although there is some consensus that it is an attitude based upon a judgement of care received. A study by Linder-Pelz (1982a, 1982b) developed the theory of satisfaction as an attitude and examined the components hypothesised to be important. This study demonstrated that patients with high expectations and perceived favourable occurrences were more satisfied than those with positive expectations and negative occurrences. This work suggests that patients cognitions about whether their expectations

have been met are important. Neither Linder-Pelz (1982a, 1982b) nor Noyes and colleagues (1974) examined the value patients placed on their expectations. It is possible that the extent to which expectations are desired will further predict satisfaction. A hierarchy of patient satisfaction with medical consultations may thus evolve in which patients who perceive the occurrence of desired expectations would be most satisfied, while patients who perceive the occurrence of undesired expectations would be least satisfied. In the middle there would be two groups of patients with expectations that did not occur, one group with desired expectations and the second with undesired expectations. The issue would be further complicated by the number and type of expectations and occurrences that each patient had.

The methods used to generate items for inclusion in questionnaires are generally rigorous although some are constrained by a priori identification of dimensions of patient satisfaction. Subsequent selection of items for final questionnaires has tended to be less rigorous. Internal consistency is the most favoured method of assessing reliability and is generally found to be acceptable (Kline, 1993). Content and construct validity are the most frequently examined aspects of validity. The studies in this review report high correlations between individual dimensions. This suggests that the most valid way of assessing satisfaction with a medical consultation is to use a unidimensional scale. What needs to be determined is whether it is necessary to develop a scale for this assessment or whether a single item would be as reliable and valid. Evidence from Shiloh, Avdor and Goodman (1990) suggests that the latter might be acceptable.

Although all the studies concerned patient satisfaction with a particular medical encounter,

the contexts of care and the patient populations varied. The studies have been carried out in different countries, over a time-span of more than 20 years. Varying amounts of information is presented on the methodologies employed, their satisfaction scales and dimensional structures. Furthermore, it is difficult to compare dimensions of satisfaction when the same labels are used for different clusters of items and similar clusters of items are given different labels.

Given the conceptual and methodological problems with existing scales, further study of patient satisfaction with a particular medical encounter requires the development of a new measure. The measure should be designed in line with the issues raised in Chapter 2 and this chapter. Such a measure should then be piloted in a number of different contexts.

Chapter 4

Variables associated with patient satisfaction: a literature review

4.1 Introduction

Associations between patient satisfaction and a variety of independent variables have been studied. These independent variables can be divided into three groups: inputs into the consultation, the process of the consultation and the outcomes of the consultation (Pendleton, Brouwer & Jaspars, 1983). Input variables can be further divided into two subgroups: variables describing the context of the consultation, and variables that a patient and doctor bring to a medical consultation. This latter subgroup covers both demographic and cognitive and affective variables related to the patient and doctor. Information on these variables is gathered either by participants completing questionnaires or by researchers noting down the relevant characteristics of each participant.

Process variables are aspects of the medical interview concerned with how the patient and doctor interact and the content of the communication between the patient and doctor. While it is possible to examine some of these variables by asking participants to complete questionnaires after the consultation, these variables are more reliably examined from a record of the consultation.

The third group, outcome variables, can be linked to either the patient or the doctor and can be immediate, intermediate or long-term. Immediate outcomes include satisfaction

with the consultation, anxiety and knowledge. An example of an intermediate outcome is adherence to treatment, and a long-term outcome could be health status of the patient. These variables may be evaluated both by questionnaire and by researchers in the field.

This thesis is concerned with the immediate outcome variable patient satisfaction and the input and process variables that are associated with it.

4.2 Previous literature reviews

Papers describing reviews of the association between a variety of independent variables and patient satisfaction with the medical consultation were identified through searching the Medline and Psychological Abstract databases from 1966 to 1994 with keywords patient satisfaction and review. Seven papers were found Ware, Davies-Avery and Stewart, 1978, Lochman, 1983, Lebow, 1983, Pascoe, 1983, Stewart and Roter, 1989, Hall and Dornan, 1990 and Lewis, 1994. Although two of the papers do not state how many studies were reviewed and there is some overlap across reviews, more than 500 studies have been included.

Ware and colleagues (1978) reviewed 111 theoretical and empirical articles on patient satisfaction. Twenty-two of the studies looking at service use indicated that use of services increased as satisfaction increased. Lebow, (1983) considered treatment and patient variables and their association with patient satisfaction in a review of inpatient and outpatient mental health care. He reported that length of treatment was not strongly associated with patient satisfaction and that demographic variables were not good predictors of patient satisfaction.

Lochman's review, 1983, was concerned with patient satisfaction after recent identifiable medical care visits. Fifteen studies published between 1975 and 1981 which examined satisfaction of outpatients, inpatients, patients in family practice settings and mothers of patients were reviewed. Demographic variables were dismissed as not influencing patient satisfaction. Three input variables were reported as associated with patient satisfaction. Patients were more satisfied when they perceived easier access to medical care and when they had longer relationships with their doctors. The third input variable positively related with patient satisfaction with humaneness of treatment was the organizational structure of the clinic. Patients were more satisfied when the clinic was more autonomous and when there was greater interorganizational communication. Further investigation revealed that these two factors resulted in the clinic being more responsive to patients' personal needs.

Several process variables were also associated with patient satisfaction. Patients were more satisfied when they had received sufficient information from the doctor and understood that information, when they perceived the doctor as caring and friendly, when their own expectations were met and when doctors took less control in the consultation (i.e the doctor allowing patients to express their opinion and thoughts).

Pascoe, 1983 examined a large number of studies published between 1957 and 1983 related to patient satisfaction in primary health care settings. His review concentrated on studies linking patient social and demographic characteristics and service use to service satisfaction, selection of provider and adherence to treatment. In contrast to the reviews by Lebow, 1983 and Lochman, 1983, Pascoe (1983) concluded that there was a

relationship between patient satisfaction and both age and gender: the evidence showed more satisfaction amongst older patients and women. Exploring the link with service use, Pascoe took the review of 22 studies by Ware, Davies-Avery and Stewart, (1978) added 17 other investigations published after 1975 and reported that they did not offer the same support as, only eight of 41 statistical tests reported a significant relationship between satisfaction and use. Regarding the selection of providers or switching from one doctor to another, Pascoe reported that dissatisfaction was associated with intention to switch services and self-report of having terminated services. He then pointed out that these investigations have mostly been retrospective, and based upon patient self-reports.

Pascoe examined the impact of input variables with emphasis on accessibility, availability, convenience, financial and structural characteristics. He suggested that satisfaction is related to easier access to, and availability and convenience of, medical care facilities. He also stated that cost is an important factor affecting patient satisfaction but that the relationship between income and cost had not been examined. He reported that the length of visit is not consistently related to patient satisfaction, although there is evidence that a regular source of care and seeing the same provider are directly associated with satisfaction.

With regard to process variables Pascoe suggested that there was a positive association between both perception of technical competence and a doctor's interpersonal skills and patient satisfaction.

Pascoe's review is comprehensive but, as he himself points out, most of the work reviewed

involved studies using cross-sectional designs.

One review by Stewart and Roter (1989) concentrated on relating doctor's behaviour to patient outcomes. In their meta-analysis of 80 studies they identified 247 different process variables, some related to the content of what was said and some to the type of interaction, and grouped these into six mutually exclusive categories: information giving, question asking, social conversation, positive talk, negative talk and partnership-building. Forty-one studies reported correlates of doctor communication with patient satisfaction. Patient satisfaction was positively associated with all variables except question asking by the doctor.

Hall and Dornan (1990) examined the association of patients' demographic variables with their satisfaction with medical care. They reviewed 221 studies of inpatient and ambulatory health care (excluding psychiatric and dental visits). Eighty-four percent of the studies had been carried out in the USA, and 7% in the UK. Eighteen percent of the studies involved community samples. Eight demographic variables were examined: age, ethnicity, gender, social status, income, education, marital status, and family size. They concluded that greater satisfaction was associated with greater age and less education, while there was a trend for patients who were married or had a higher social status to be more satisfied. There was no association between ethnicity, gender, income or family size and patient satisfaction.

Lewis (1994) reviewed factors influencing patients' views of quality care in general practice. He drew on studies conducted in the UK and the United States. He concluded

that doctors' interpersonal skills were more valued by patients than factors like access, availability and service provision. Lewis also concluded that older patients were more satisfied and that patients with more education were less satisfied.

Summary

These reviews suggest that of the contextual variables examined, access to care has a larger influence on patient satisfaction than length of treatment. With regard to demographic variables older patients are more likely to report satisfaction than younger patients. Most reviews report an association between process variables and patient satisfaction.

A difficulty with most reviews is that they do not distinguish between studies of health care in general, or studies of specific doctor-patient encounters. These reviews do, however, suggest areas that may be considered for examination with regard to specific doctor-patient consultations. Three explanations for the conflicting results regarding the association of demographic variables with patient satisfaction are related to the methodologies used in the studies reviewed. First, some studies asked patients about a specific clinical encounter, whereas others asked about their own doctor or about doctors in general. Second, some patients were actively seeking health care while some studies were on patients who were not currently seeking care. The third possible explanation relates to where the questionnaire or interview was carried out.

4.3 Literature review

This chapter presents a review of studies of patient satisfaction with a specific outpatient

medical consultation. A search of Medline and Psychological Abstracts databases from 1966 to 1996 with keywords of "patient satisfaction" identified numerous papers on this topic.

Papers were included in the review if:

i) They were published between 1972 and 1996.

ii) They were published in English.

iii) They concerned description and predictions of patient satisfaction with outpatient medical consultations.

Papers were excluded from this review if they belonged to one of three categories:

i) Papers concerned with the impact of interventions on patient satisfaction (they are reviewed in Chapter 12).

ii) Review papers and papers describing meta-analyses of variables. The information provided on the individual studies does not identify which studies are of specific doctor-patient interactions and which are more general surveys of health care.

iii) Papers that reported on studies that had examined patient satisfaction with general practice consultations. Several papers examined patient satisfaction with family practice and group practice encounters in the USA and Canada. As these are not outpatient clinics in the way that term is understood in the UK, these papers are also excluded.

The studies were conducted mainly in the USA and UK.

This chapter presents results of the review examining the relationship between input and process variables and patient satisfaction. Section 4.4 examines input variables, and section 4.5 examines process variables. Section 4.6 discusses these variables and compares the results of the current review with those discussed above. Section 4.7 draws some conclusions from the review.

Eighteen papers examining patient satisfaction with a specific outpatient medical encounter were found. Table 4.1 provides information on the number of participants in the studies, the presenting problem, the context and country in which the study was conducted, together with information on the scales used to assess satisfaction.

Table 4.1 Studies of patient satisfaction with a specific outpatient consultation

Key: NR = Not reported M.I.S.S. = Medical Interview Satisfaction Scale

	Korsch and Negrette	**Stiles, Putnam, James and Wolf**	**DiMatteo, Taranta, Friedman and Prince**	**Fitzpatrick and Hopkins**	**Weinberger, Greene and Mamlin**
Year published	1972	1979	1980	1981a and 1981b	1981
Number of patients (gender)	800 (mainly female)	52 (64% female)	82 (NR)	95 (63% female)	82 (75% female)
Number of doctors (gender)	64 (NR)	19 (NR)	NR	18 (NR)	20 (NR)
Presenting problem	Paediatric	Various	NR	Headache	NR
Clinic	Emergency walk-in clinic First visits	General medical screening clinic	Outpatient clinic	Neurological outpatients New referrals	Internal Medical outpatient clinic
Country	USA	USA	USA	UK	USA
How satisfaction assessed	Global	Cognitive and Affective dimensions of M.I.S.S.	Global plus three specific items	Rated by interviewers	Global plus three specific items

Table 4.1 continued

	Comstock, Hooper, Goodwin and Goodwin	Bartlett, Grayson, Barker, Levine, Golden and Libber	Buller and Buller	Friis and Tilles	Johnson, Levenkron, Suchman and Manchester
Year published	1982	1984	1987	1988	1988
Number of patients (gender)	150 (71% female)	56 (NR)	219 (NR)	200 (60% female)	304 (65% female)
Number of doctors (gender)	15 (67% male)	5 (NR)	NR	NR	NR
Presenting problem	NR	Chronic illness	Medical Gynaecological Obstetric	Various	NR
Clinic	Medical outpatient clinic	Outpatient clinic	Outpatient clinics	Internal medicine clinics and an emergency room	Ambulatory clinic
Country	USA	USA	USA	USA	USA
How satisfaction assessed	8 items	Global	Global (16 items)	7 items	Global (19 items)

	Bertakis, Roter and Putnam	Hill, Bird, Hopkins, Lawton and Wright	Anderson and Zimmerman	Hall, Irish, Roter, Ehrlich and Miller	Greene, Adelman, Friedman and Charon
Year published	1991	1992	1993	1994b	1994
Number of patients (gender)	550 (58% female)	70 (74% female)	134 (100% male)	524 (53% female)	81 (79% female)
Number of doctors (gender)	127 (NR)	NR	12 (58% male)	177 (71% male)	19 (NR)
Presenting problem	Chronic condition	Rheumatoid Arthritis	Diabetes	Various	Multiple chronic conditions
Clinic	Outpatient and group practice	Rheumatology outpatients	Outpatient clinics	Outpatient clinics Community hospitals Private practices	Hospital medical clinic First visits of patients aged 60 and over
Country	USA and Canada	UK	USA	USA and Canada	USA
How satisfaction assessed	Global (5 dimensions)	Leeds Satisfaction Questionnaire	Global (9 items)	Global (43 items)	Global and four dimensions

Table 4.1 continued.

	Kenny	Butow , Dunn, Tattersall and Jones	Michie, Axworthy, Weinman and Marteau
Year published	1995	1995	1996
Number of patients (gender)	272 (67% female)	92 (87% male)	131 (NR)
Number of doctors (gender)	NR (84% male)	1 (NR)	11 (NR)
Presenting problem	Various	Cancer	Genetic problem
Clinic	Medical specialist or GP	Outpatient and inpatient clinics	Genetic counselling outpatient clinic
Country	Australia	Australia	UK
How satisfaction assessed	7 items	22 items	3 items on satisfaction with information

4.4 Input variables

As described above, input variables can be divided into three groups: contextual, demographic and cognitive and affective. In addition the demographic and cognitive and affective variables may be linked to either the patient or the doctor. Appendix two lists the contextual variables, Appendix three lists the demographic variables and Appendices four and five list the cognitive and affective variables that were examined in the 18 studies for their associations with patient satisfaction.

4.4.1 Contextual variables

These variables, listed in Appendix two, include the setting, some aspects of the illness itself as well as the type and length of relationship the patient has had with the doctor prior

to the consultation under examination. Fifteen variables were examined for their association with patient satisfaction in 14 of the 18 studies.

Type of presenting problem. Two studies reported no association between type of presenting problem and patient satisfaction, (Korsch and Negrette, 1972, Kenny, 1995) while a third study reported that patients with a longer history of the problem were less satisfied with the consultation (Fitzpatrick and Hopkins, 1981b).

Medical diagnosis. Three studies examined the association between medical diagnosis and patient satisfaction, but in three very different settings. One study, in a general medical screening clinic in the USA, reported no association with patient satisfaction (Stiles et al, 1979). The second study, conducted in a neurology outpatient clinic in the UK reported that patients with migraine were more dissatisfied than patients with tension headaches (Fitzpatrick and Hopkins, 1981b). The third study, examining satisfaction with genetic counselling, again in the UK, reported that patients were more satisfied if the diagnosis was known (Michie et al, 1996).

Summary

Half of the 15 contextual variables have been examined only once. For the seven variables that have been examined more than once no strong pattern of association between these independent variables and patient satisfaction has emerged.

4.4.2 Demographic variables

In this sub-group of input variables, the demographic characteristics of patients are the

most frequently examined. There are a number of reasons for this. Initially research of this nature was very patient oriented and little attention was paid to the impact that characteristics of the doctor could have on patient satisfaction. Demographic variables are relatively easy to assess and are also relatively stable compared with cognitive and affective characteristics.

Gender, age, race/ethnicity and level of education of the patient are the four most frequently examined demographic variables (Appendix three).

Gender. Seven studies examined the influence of gender of the patient on patient satisfaction. Four reported that women were more satisfied with their consultations than men (Buller and Buller, 1987, Friis and Tilles, 1988, Bertakis, Roter & Putnam, 1991, Hall et al, 1994b) and three studies found no association between patient gender and satisfaction (Stiles et al, 1979, Fitzpatrick and Hopkins, 1981b, Weinberger, Greene and Mamlin, 1981).

Patient age. Eight studies examined the impact of patient age. Four studies reported no relationship (Stiles et al, 1979, Fitzpatrick and Hopkins, 1981b, Buller and Buller, 1987, Anderson and Zimmerman, 1993) and four reported that older patients were more satisfied (Weinberger Greene & Mamlin, 1981, Friis and Tilles, 1988, Bertakis, Roter & Putnam, 1991, Michie et al, 1996).

Race/ethnicity. Six studies examined this variable. Five reported no relationship (Stiles et al, 1979, Weinberger, Greene and Mamlin, 1981, Bartlett et al, 1984, Friis and Tilles,

1988, Anderson and Zimmerman, 1993), one reported that whites were more satisfied (Bertakis, Roter & Putnam, 1991) without providing information on the other racial groups included in the study.

Level of education was examined in five studies. Three reported no relationship (Korsch and Negrette, 1972, Stiles et al, 1979, Fitzpatrick and Hopkins, 1981b), and two a negative relationship with patient satisfaction whereby more education was associated with less satisfaction (Bartlett et al, 1984, Anderson and Zimmerman, 1993).

Nine studies have examined the social and demographic characteristics of doctors and their impact on patient satisfaction. The most frequently examined variables are gender and seniority.

Gender of doctor. Four studies assessed the association of gender of the doctor with patient satisfaction. Three studies reported no relationship between these two variables (Bertakis, Roter & Putnam, 1991, Anderson and Zimmerman, 1993, Kenny, 1995). One study reported higher satisfaction levels in patients seen by male doctors (Hall et al, 1994b).

Seniority. All three studies that examined seniority of doctors reported no associations with patient satisfaction (Fitzpatrick and Hopkins, 1981b, Comstock et al, 1982, Anderson and Zimmerman, 1993).

4.4.3 Cognitive and affective variables

Twelve of the 18 studies examined the association between cognitive and affective variables and patient satisfaction. Five studies examined cognitive and affective variables related to patients and five examined variables only related to doctors. The remaining two studies examined cognitive and affective variables related to both patients and doctors.

Appendix four lists the seven cognitive and affective variables relating to patients that were examined. Six of these variables were examined once and five were associated with patient satisfaction. Four variables were associated positively with patient satisfaction: expectations being met, perception of doctor as friendly, main worry addressed, fulfilment of patient requests. The fifth variable, perception of uncertainty in doctor was negatively associated with patient satisfaction. The seventh variable, perceived health status was examined twice.

Perceived health status. One study reported that patients who perceived their health as better were more satisfied with their consultations (Bartlett et al, 1984). A second study reported no association between perceived health status and patient satisfaction (Bertakis, Roter & Putnam, 1991).

The 13 cognitive and affective variables related to doctors were examined just once. Eight variables were associated with patient satisfaction (see Appendix five). Patients were more satisfied with the encounter when doctors: expressed empathy, courtesy, affiliativeness, were themselves more satisfied with the encounter, characterised the doctor-patient relationship as a partnership, were more skilled at decoding body movements and decoding positive cues to emotion, and intended to communicate positive

emotion but actually communicated negative emotion.

Summary

In the 18 studies, 48 input variables, 15 contextual, 13 demographic and 20 cognitive and affective, were examined. Demographic characteristics were examined more frequently than cognitive and affective ones. The reported results suggest that when there is a gender difference, women are more likely to be satisfied with their consultations than men, and that ethnicity is not associated with patient satisfaction. For the majority of the variables examined, there was little evidence of a consistent relationship between any of the variables and patient satisfaction with the consultation. One reason is that insufficient studies have been conducted to determine with confidence the relationship between any of the variables and patient satisfaction.

4.5 Process variables

Appendix six lists the process variables that have been studied. For the purposes of the Appendix, variables with similar content but slightly different names have been grouped together. Although the content is similar, the method of examining the variables has varied from study to study. These differences are partly due to the large number of coding systems that have been developed for consultation analysis. Driven by different perspectives, concepts and purposes of coding, research teams develop their own coding systems. It is unusual, therefore, to find one study simply replicating the coding frame and procedure of another. The first study to use another's coding frame involved audio-tape recording of interviews of 500 paediatric consultations, transcribing the tapes and coding the various features of the consultations with an adaptation of Bales's "interaction process

analysis" which describes the content and tone of verbal interactions in terms of positive and negative affect (Korsch and Negrete, 1979).

Process variables and patient satisfaction

Thirteen of the 18 studies in the current review examined the association of process variables and patient satisfaction. Despite the differences in the interaction analysis systems used, it can be seen from Appendix six that most studies examining these variables find an association with patient satisfaction, in the hypothesised direction. This is true where the variable is global in concept such as doctors' communication skills or very specific such as doctors asking questions about the social situation.

Although 30 process variables have been examined, the majority were assessed only once. One variable was examined in seven studies: length of the consultation.

Length of consultation. Three studies reported a positive association (Comstock et al, 1982, Greene et al, 1994, Kenny, 1995) and four studies found no relationship between length of consultation and patient satisfaction (Korsch and Negrette, 1972, Buller and Buller, 1987, Anderson and Zimmerman, 1993, Butow et al, 1995).

Two variables were examined in five studies: information giving by the doctor and doctor initiating some social conversation (i.e. asking questions about social and personal issues).

Information giving by the doctor. Four studies reported a positive association (Stiles, et

al, 1979, Comstock et al, 1982, Bertakis, Roter & Putnam, 1991, Hill et al, 1992) and the fifth reported no association with patient satisfaction (Greene et al, 1994).

Doctor initiating social conversation. Four studies reported a positive association with patient satisfaction when the doctor asked questions about social or personal topics (Korsch and Negrette, 1972, Weinberger, Greene and Mamlin, 1981, Bertakis, Roter & Putnam, 1991, Hill et al, 1992). One study reported no association with patient satisfaction (Michie et al, 1996).

Three variables were examined in three studies: doctor domination of the interview, presence of shared laughter, activity of patient in the consultation.

Doctor was active or dominated the interview. The three studies that examined this variable reported a negative association with patient satisfaction when the doctor was perceived to be active or dominant in the consultation (Weinberger, Greene and Mamlin, 1981, Buller and Buller, 1987, Bertakis, Roter & Putnam, 1991).

Humour/shared laughter. Two studies reported no association with patient satisfaction (Weinberger, Greene and Mamlin, 1981, Comstock et al, 1982) and the third a positive association between shared laughter and patient satisfaction with the consultation (Greene et al, 1994).

Patient activity. Two studies found a positive association (Stiles et al, 1979, Bertakis, Roter & Putnam, 1991) and one no association (Weinberger, Greene and Mamlin, 1981)

between patients being active in the consultation and satisfaction with the consultation.

Given the non-experimental and cross-sectional nature of the designs these studies are unable to clarify the causal direction of any reported associations.

Summary

As with cognitive and affective variables, the same process variable has seldom been examined in more than one study. When process variables are examined an association with patient satisfaction is usually found in the hypothesised direction. The fact that the same variable is seldom examined twice reflects not only the different labels attached to similar variables in different studies but also the different coding schemes that have been developed.

It is not possible to draw conclusions about the association of these variables with patient satisfaction or the relative importance of these variables until sufficient studies examine doctor-patient interaction using the same or similar coding systems.

4.6 Discussion

A large number of input and process variables have been examined in the search for associations with patient satisfaction with specific medical encounters. Despite this, there is little consensus on which variables have a strong relationship with patient satisfaction.

The results of the current review may be explained in several ways. First, there is a lack

of replication: the independent variables examined vary considerably from study to study. Second, when an independent variable is examined in more than one study, the way in which it is assessed varies. A third explanation for the lack of consensus is that although the outcome variable for each study was patient satisfaction there was a large variation in the conceptualisation and operationalisation of this measure (see Chapter Three). A further possible explanation for the current findings is that although all the studies are based in medical outpatient clinics, participants come from different patient populations.

The current results are somewhat similar to those reported in the reviews discussed in the introduction to this Chapter. Two variables, gender and age of patient appear to be associated with patient satisfaction in the same way across several studies and may be good predictors of patient satisfaction. Length of the consultation also seems to be associated with satisfaction, but, given the nature of the study designs, it is not possible to determine the causal nature of this association. While longer consultations may lead to increased satisfaction, it is also possible that more satisfied patients behave in such a way as to produce longer consultations. Currently it is not known whether longer consultations are a result of more talk, more silence or slower speech speed.

In 1981 Fox and Storms explained the lack of consensus over the association between social and demographic variables and patient satisfaction by positing that two intervening variables, orientation toward care and conditions of care mediate the association with demographic characteristics. They hypothesised that lack of comparability between expectations and experience would alter the social and demographic satisfaction correlations between studies and supported this with data from a community survey. This

suggestion requires further exploration. It may be that one variable cancels out the impact of many of the other variables considered.

A related idea, that patient satisfaction may be associated with interactions between independent variables, has been examined recently by Hall and colleagues (1994a). Hall and colleagues examined the relationships between doctor's gender, patient's gender and doctor's perceived age, and patient satisfaction. In two studies of over 600 community and hospital based visits they reported lower ratings of satisfaction in patients examined by younger-looking female doctors. Of the eight possible combinations: female patient with younger or older looking female doctors, female patient with younger or older looking male doctors, male patient with younger or older looking female doctor, and male patient with younger or older looking male doctor, they reported that male patients examined by younger looking females doctors were the least satisfied. Consultations were analysed using Roter's Interaction Analysis System. The results suggested that gender-related values and expectations influence patients' reactions to doctors' behaviour. The report of the study does not state whether the term "examined" refers to patients receiving a physical examination or whether the term is used as a synonym for consultation. The interacting effects of gender and ages of patient and doctor may be different when a consultation includes a physical examination.

A further difficulty, to understanding associations is that most data collected in this field are correlational. Stiles (1989) pointed out that most studies of patient satisfaction assume that if a process variable contributes causally to patient satisfaction, then the variable and patient satisfaction should be positively correlated across patients (or

negatively correlated if the process variable is hypothesised to be a negative occurrence such as interruptions to the consultation). This approach fails to view patients as individuals; it assumes that all patients have the same requirements for the variable in question. It also assumes a linear causal model, taking no account of interactions.

Two aspects of research into patient satisfaction need to be addressed: theory and research design and method. Theoretical models are rarely used to inform research in this area. Ley's work in the late 1970's would suggest that patient satisfaction with a consultation is influenced by their satisfaction with communication. He showed that this was associated with both comprehension and patient anxiety. These cognitive and affective variables have not been examined by any of the studies reviewed in this chapter. In addition the work conducted on consumer satisfaction, which has identified that expectations of a product and whether they are met influences satisfaction with that product, would be relevant in today's consumer oriented health service (Ross et al, 1987). The relevance of this concept is supported by results from the two studies that have examined this variable and reported a positive association with patient satisfaction.

The second aspect of research into this area that has to be addressed is research design and method. Three aspects of this are: the lack of experimental designs, the non-standard measures that are employed and the type of analyses that are conducted. Without these elements it is not possible to determine the predictors of patient satisfaction. Williams and Calnan (1991) addressed the need for multivariate analyses in their study of patient satisfaction with general practice as did Hall and Dornan (1990) in their meta-analysis of demographic variables. Multivariate analyses can investigate predictors of patient

satisfaction rather than determine variables associated with patient satisfaction.

In addition, studies are required that include both input and process variables. Those variables with a significant bivariate association with patient satisfaction may then be included in multivariate analyses to examine interactions between variables and explore predictors of patient satisfaction.

4.7 Conclusion

Despite considerable research into patient satisfaction with specific medical encounters there is little consensus on the association between patient satisfaction and any of the independent variables described in this chapter.

A few tentative conclusions may be drawn. Demographic and cognitive and affective variables are the most often examined. Of these, the majority of studies on ethnicity and level of education of the patient report no association with satisfaction while half the studies on age report older patients are more satisfied and half the studies on gender report female patients are more satisfied than male patients.

Contextual variables seem to have little influence on patient satisfaction. When process variables are examined some association with patient satisfaction is usually found. The designs do not allow the results to inform understanding of the nature of any relationship observed; that is, whether it is causal and, if so, in what direction.

This review of the work already carried out suggests several variables that require further

exploration: patient expectations, social conversation and information giving by the doctor. Three methodological issues may also assist in further explorations of patient satisfaction:

i) use of experimental studies that attempt to alter the amount of interaction that takes place in any consultation,

ii) use of multivariate analyses to determine which variables predict patient satisfaction, and

iii) the inclusion of analyses that explore how variables interact to influence patient satisfaction.

Given the constraints of the studies mentioned above, the picture may be clarified by the development of a model of patient satisfaction. Theoretical models of patient satisfaction are reviewed in the next chapter.

Chapter 5

Models of patient satisfaction

5.1 Introduction

Early models of patient satisfaction were based on work conducted in job, marketing and consumer research. A brief synopsis of the models developed from these areas will be presented (sections 5.2.1 to 5.2.7) before a more detailed description of models designed with patient satisfaction as the focus (sections 5.2.8 to 5.2.12). (A more detailed description of the early models can be found in a review paper by Pascoe (1983)).

5.2 Models of patient satisfaction

The first two approaches described below were originally developed in research on job satisfaction (Lawler, 1973).

5.2.1 Fulfilment model

The Fulfilment model is very general and states that satisfaction is a function of the absolute amount received from a situation; it is unrelated to how much an individual feels they should receive or would want to receive. This model suggests that the more a patient receives the more satisfied the patient will be. For patients this could be translated into the more medication a patient gets or the more often the doctor sees the patient, the more satisfied the patient will be.

Critique: Fulfilment models are very general and assume that absolute amount received alone determines satisfaction. These models do not consider either what a patient expects

or values.

5.2.2 Discrepancy model

Discrepancy models define satisfaction as the difference between actual outcome and an ideal outcome (Lawler, 1973). Discrepancy models take the participant's perception of what is expected as the baseline for comparing actual outcomes.

Critique: Discrepancy models allow an individual to compare what was expected with an actual outcome. These models assume that anything that was not expected produces dissatisfaction. Discrepancy models do not take account of the value a patient may attach to an expectation. In some instances having something happen that was not expected may result in higher levels of satisfaction and on other occasions it may have the opposite effect.

Four other expectancy models have also been considered in relation to patient satisfaction.

5.2.3 Contrast model

This model (Ilgen, 1971, Weaver and Brickman, 1974) is very similar to the discrepancy model as it predicts that when expectations are not met by actual performance, the contrast between the two will cause a patient to magnify the discrepancy. However the model acknowledges that aspects that are unexpected may cause satisfaction or dissatisfaction. Performance that is higher than expected will be judged satisfactory; performance that is less than expected will be judged as unsatisfactory.

Critique: This model acknowledges that outcomes can meet, surpass or be lower than expectations. Like the discrepancy model the contrast model does not take account of the

value an individual may attach to an expectation.

5.2.4 Assimilation model

This model draws on Festinger's (1957) theory of cognitive dissonance and suggests that disconfirmed expectations create psychological tension. This tension is alleviated by adjusting perceptions of performance to match expectations. This approach predicts that performance that is moderately lower than expectations will not cause dissatisfaction because perceptions of performance will be assimilated to match higher expectations.

Critique: This model also omits the patient's value of an expectation. By proposing that patients assimilate performances that are slightly lower than expectations this model suggests an explanation of the high levels of satisfaction reported in most patient satisfaction studies.

5.2.5 Assimilation-Contrast model

This model combines both assimilation and contrast models to explain the effects of disconfirmed expectations (Sherif and Hovland, 1961). The Assimilation-Contrast model predicts that when disparity between expectations and performance is small, an assimilation effect occurs. It postulates that there is a range of acceptance around an expectation and discrepancies that are within this range will be integrated. Contrast effects occur only when discrepancies between performance and expectations are relatively large. In such cases the range of acceptance is exceeded and the predictions of the contrast model are considered to apply.

Critique: As this model includes an assimilation component it can account for the high levels of satisfaction found in most patient satisfaction studies. It also begins to address

the situation when something occurs which is very different from expectations. It does not, however, include the patient's value of the expectation. If an expectation is highly valued it may be that only a slight discrepancy from what is expected is enough to make a patient dissatisfied. An expectation with little value to a patient may have a wide range of outcomes that can be assimilated.

5.2.6 Adaptation Level model

A model which has been proposed to explain consumer satisfaction is the adaptation-level model originally proposed by Helson (1948). This model, developed by research in the field of sensory processing was designed to explain the perception of new stimuli but has been widely applied to the study of attitudes and attitude change. This model postulates that the neutral, adapted background provides a standard against which new stimuli are perceived. Once an adapted level is created, subsequent evaluations, either positive or negative, will remain close to the original level. Only major influences on the adaptation level will change the final evaluation. Thus, the adaptation level is an anchor for evaluations. In the expectation-satisfaction link, expectations serve as the adaptation level and reference point for satisfaction.

Critique: This model is more complex than the previous ones as it involves a feedback loop whereby experience influences the baseline against which future experience is evaluated. It has the same advantages of the assimilation-contrast model in that it may explain why high levels of patient satisfaction are often reported but it fails to incorporate the value an individual may attach to an expectation.

5.2.7 Miller's Expectancy-Value model

Working in consumer satisfaction Miller (1977) developed a more detailed expectancy value model. In this model four different levels of expectations provide a subjective standard for judging a product or service: ideal, minimum, expected, and deserved. The ideal, or wished for, level represents a maximum, whereas the minimum is the least acceptable level. The expected level is based on past averaged experience. The deserved level reflects the investments and costs required on the part of the consumer which establish his or her subjective sense of what should be.

Critique: This model identifies different levels of expectation. Like the Adaptation Level Model it acknowledges that previous experience can alter the baseline against which future experience is evaluated.

When comparing the research evidence for the contrast and assimilation models, Oliver (1977) concluded that the latter was the better predictor of consumer satisfaction. Examining the contrast, assimilation and assimilation-contrast models, LaTour and Peat (1979) concluded that the ambiguity of the attribute being evaluated determines how assimilation and contrast effects operate. They reported that assimilation effects occur in reaction to ambiguous attributes, and contrast effects result when responding to less ambiguous attributes.

Examining product evaluation across a wide range of goods and services, Oliver (1981) reported that most studies found that satisfaction was influenced mainly by disconfirmation and, to a lesser but significant degree, by prior expectation levels. Shopper expectations prior to entering a new department store and the degree to which

these expectations were fulfilled was found to be related to satisfaction with a newly opened department store (Swan, 1977).

More recent models have been developed from the field of patient satisfaction research.

5.2.8 Expectancy-value model

An expectancy value model was developed by Linder-Pelz (1982b). She concentrated on what she termed social psychological variables such as expectations, values, entitlement and perceived occurrences. This model is based on the attitude theory of Fishbein and Ajzen (1975). In this model satisfaction is based on two distinct pieces of information: belief strength and evaluation of the particular attribute. Satisfaction is perceived as an attitude related to both beliefs that medical care possesses certain attributes (such as access, efficacy, cost and, convenience) and the patient's evaluation of those attributes. Specifically, measures of belief strength(B) about attributes and measures of evaluation(E) of those attributes were multiplied and the products summed (see Figure 5.1).

Figure 5.1: Expectancy-Value Model of Patient Satisfaction (Linder-Pelz, 1982b)

$$\text{SATISFACTION} = \sum_{i=1} B_i \, E_i$$

B = Measure of Belief Strength
E = Measure of Evaluation
i = Attribute

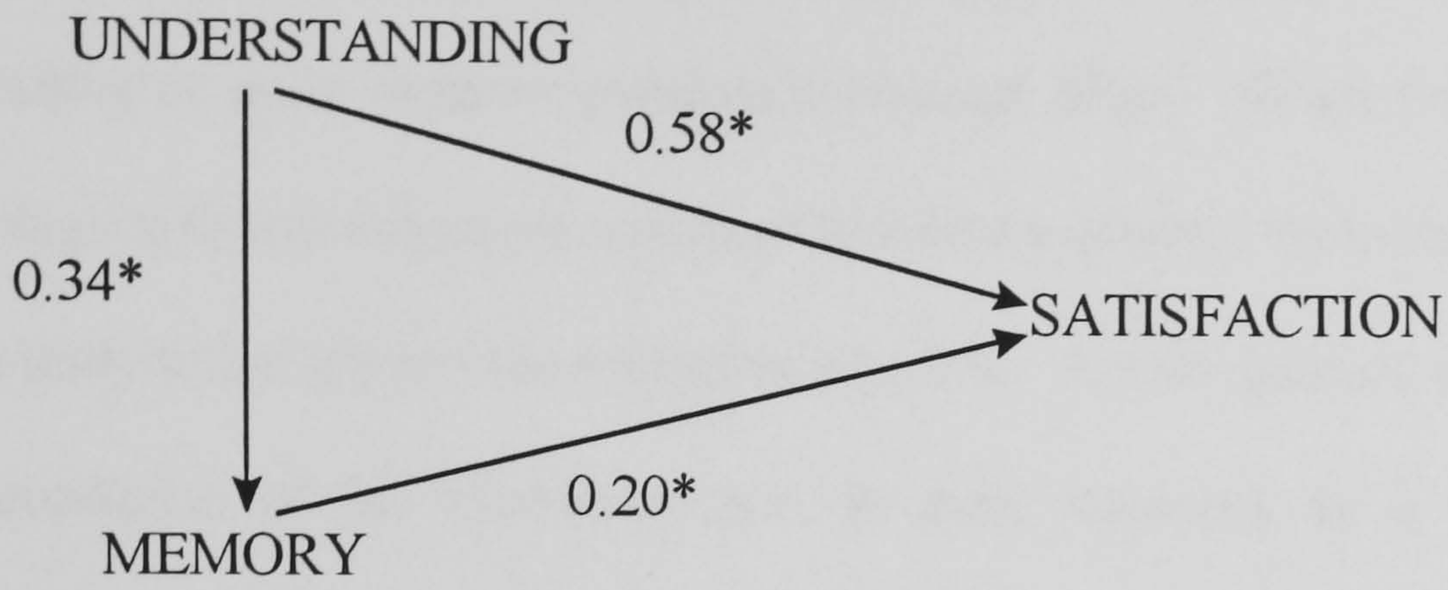
Critique: This model takes account of an individual's view of what is important. In a series of hypotheses designed to test this value-expectancy model, it was not supported (Linder-Pelz 1982b). The model was tested on the assumption that cognitive and affective responses (the belief strengths and attribute evaluations) were interactive and the problem may have been in the way that Linder-Pelz operationalized the concepts, in that the value component was not specifically linked to expectations. Values were examined by one question on the importance of each of three elements of a consultation, and expectations were operationalized by asking patients about five aspects of the doctor's behaviour. In such a model it may be that expectations and values are independent predictors of satisfaction.

5.2.9 Ley's Cognitive model

This model postulates that a significant proportion of the variance in patient satisfaction can be accounted for by patient comprehension and memory (see Figure 5.2). The evidence for this model is a positive correlation between the amount of information patients claim to understand and patient satisfaction with a consultation, a finding that has been replicated in many studies by Ley and colleagues (Ley and Spelman, 1967, Ley, 1977, Ley, 1982).

Critique: This model postulates that level of comprehension is the main contributor to patient satisfaction. Ley states that it is only a partial model of satisfaction and adherence and it does not take into account either expectations, or values associated with expectations. It may be that it is the patient's expected level of comprehension that is associated with patient satisfaction and not the absolute level.

Figure 5.2 Ley's Cognitive Model of Patient Satisfaction (Ley, 1982)



* = mean correlation

5.2.10 Pascoe's model

In his model of patient satisfaction, Pascoe (1983) integrated the assimilation-contrast model of consumer satisfaction with Miller's (1977) expectancy-value model of four different levels of expectations and LaTour and Peat's (1979) proposal that the level of ambiguity of the attribute being evaluated determines how assimilation and contrast effects operate.

Pascoe proposed that patient satisfaction results from a comparison of salient characteristics of the individual's health care experiences with a subjective standard. The subjective standard used for judging health care experience may be any one or a combination of Miller's four suggested levels: ideal, deserved, expected or minimal. The comparative process is assumed to include a cognitively based evaluation of the health care experience and an affectively based response to different aspects of the experience.

Pascoe proposed that both assimilation and contrast effects may operate with regard to

the patient's subjective standard. Experiences that fall within a range of acceptance relative to the subjective standard are assimilated, while experiences that are either more positive or more negative produce a contrast effect. Given that there may be some ambiguity for patients about aspects of health care delivery, the latitude of acceptance may be fairly broad around the subjective standard. A wide latitude of acceptance leads to assimilation of the experience and, in most instances, to a sense of satisfaction. Satisfaction is therefore fairly common.

Exceptions leading to dissatisfaction are (a) instances of such poor health care delivery that a contrast effect occurs or (b) instances where a negative subjective standard exists and care is not positive enough to exceed the latitude of acceptance.

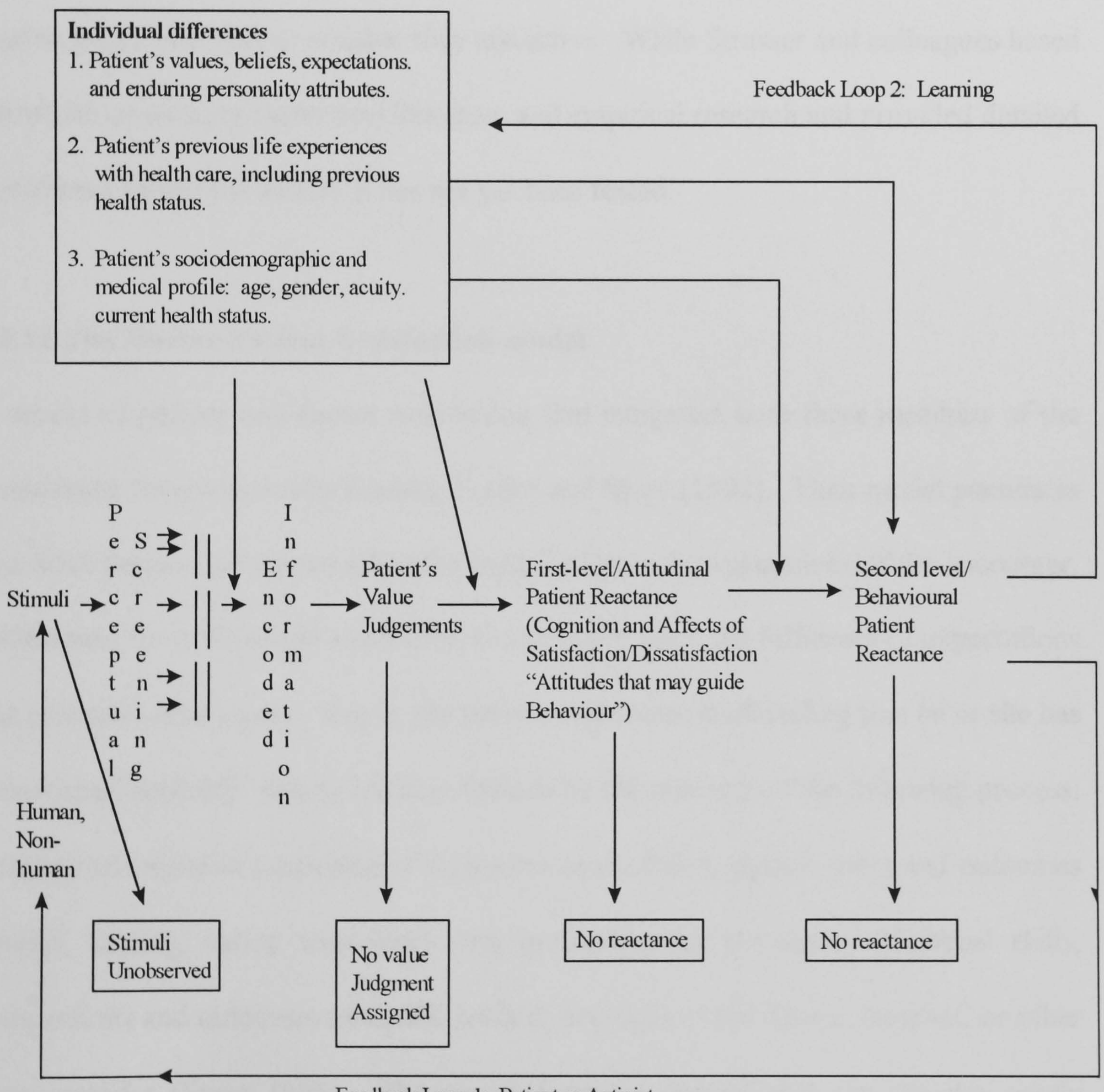
Critique: By incorporating the concept of assimilation this model provides an explanation for the often reported high levels of patient satisfaction. This model can be interpreted as being oriented to the individual patient; taking into account individual differences in the salient characteristics of health care, expectations, and ambiguity of attitude towards the care. This model has not been operationalised or tested.

5.2.11 Strasser's model

This model of patient satisfaction (Strasser, Aharony & Greenberger, 1993) is based on six principles concerning patient satisfaction: 1) it is driven by human perceptions; 2) it may lead to both a multifaceted definition of patient satisfaction and summary judgments; 3) it is dynamic: that is, it may change over time, between encounters, and within specific encounters; 4) it results in both attitudinal and behavioural responses; 5) it allows patients to function in two capacities: first, as judges of their health care encounters and second,

as active participants influencing their subsequent satisfaction levels. In this capacity, patients are potentially causal, built-in, variables in the model, and 6) it is person-specific, arising from differences in values, beliefs, expectations, previous health care experiences, and social and demographic factors including the patient's current health status (see Figure 5.3).

Figure 5.3 Strasser's Model of Patient Satisfaction (Strasser, Aharony & Greenberger, 1993).



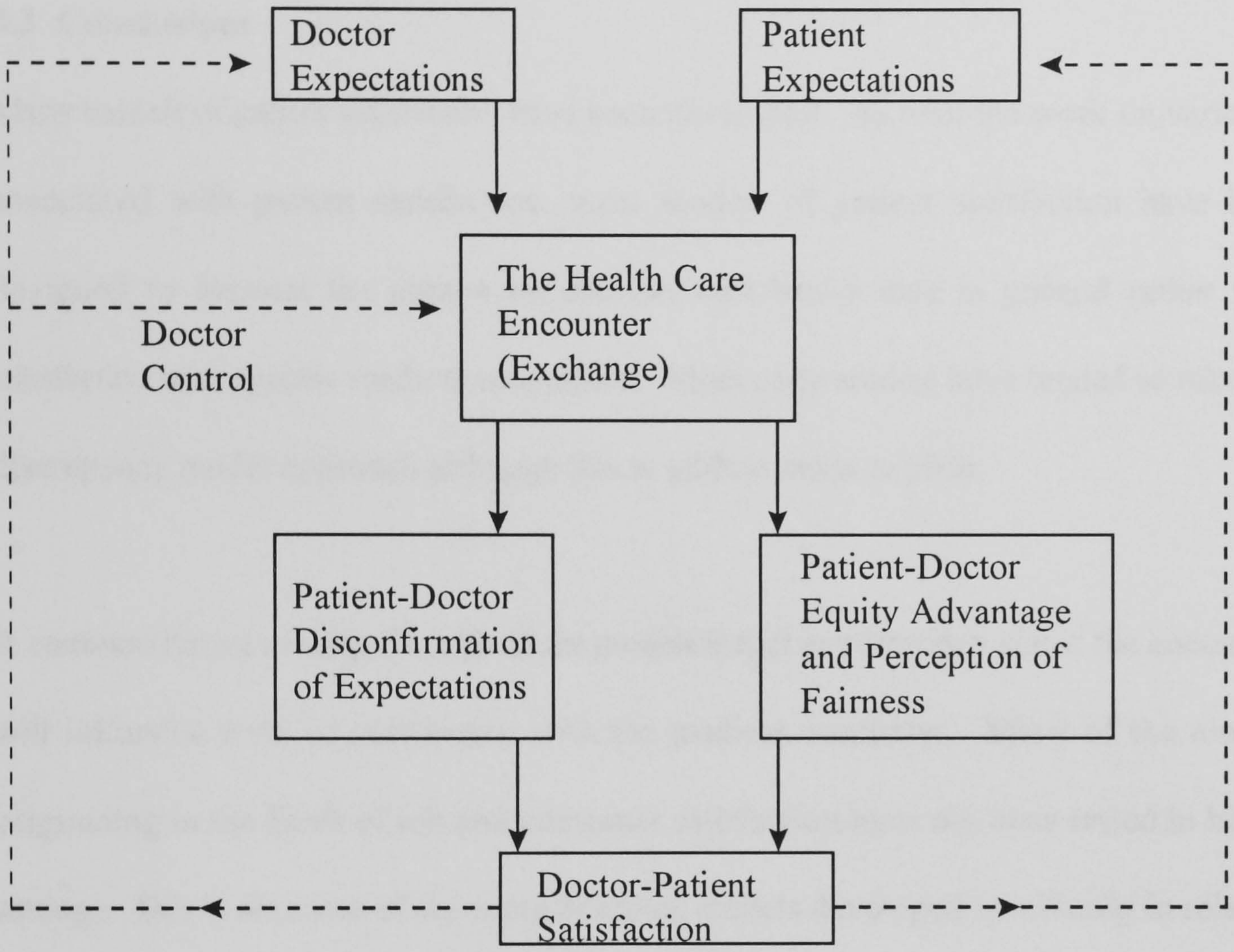
Critique: This is a very comprehensive model of patient satisfaction. It takes account of individual differences in relation to expectations as well as social and demographic variables. It incorporates the perception of stimuli (as in the adaptation level model) together with encoding of information which is postulated to influence how patients respond both immediately and in future encounters. This model raises the possibility that patient satisfaction may be stable or ephemeral and that it may vary across patient populations or medical encounters. The model also considers whether patients are simply passive judges of events or whether they are active. While Strasser and colleagues based the model on existing theoretical literature and empirical research and provided detailed hypotheses to test the model, it has not yet been tested.

5.2.12 The Doctor-Patient Satisfaction model

A model of patient and doctor satisfaction that integrates both these members of the consultation was proposed by Koehler, Fottler and Swan (1992). Their model postulates that both patient and doctor enter the consultation with expectations of the encounter. Satisfaction, for both patient and doctor, is contingent upon the fulfilment of expectations and perceptions of equity: that is, the patient and doctor both feeling that he or she has been treated equitably. Equity has been defined by the outcome of the following process: that patients make comparisons of their own inputs (time, money, pain) and outcomes (health, healing, caring treatment) with perceptions of the inputs (technical skills, compassion) and outcomes (financial reward, prestige) of the doctor, hospital, or other care provider (Swan 1985). The reported results showed that the patients' equity perceptions were an important part of the satisfaction process. In the current model, satisfaction from the encounter feeds back into the process by influencing expectations

concerning subsequent encounters (see Figure 5.4).

Figure 5.4: The Doctor-Patient Model (Koehler, Fottler & Swan, 1992).



_____ Direct relationships

- - - - - - - - Feedback

Critique: This is the only model of patient satisfaction to acknowledge that there are two participants in a consultation and that there may be an interaction between them that influences satisfaction. The model is used to explain both specific consultations and the quality of the health care system in general in the United States. The model has not been

tested and Koehler and colleagues state that empirical support for the linkages suggested between patient and doctor satisfaction are required and that research needs to be carried out on the model.

5.3 Conclusions

Many models of patient satisfaction have been developed. As with the work on variables associated with patient satisfaction, most models of patient satisfaction have been designed to account for patient satisfaction with health care in general rather than satisfaction with specific medical encounters. Most early studies have tended to take the discrepancy model approach although this is seldom made explicit.

A common thread running through all the models is that expectations about the encounter will influence level of satisfaction with the medical encounter. Many of the models originating in the fields of job and consumer satisfaction have not been tested in health settings. This is also true of the more complex models developed specifically in relation to patient satisfaction. This may be because authors seldom make explicit how expectations may be assessed and little information is provided on how to operationalise and test the models.

What is required is some operationalisation of the more complex models that allows an examination of specific expectations, whether affective, behavioural or cognitive, assessed prospectively with a methodology that also allows the value assigned to these expectations to be examined. In order to test the models, standardised assessments of satisfaction are needed.

The next Chapter describes the development of a standardised measure of satisfaction with a specific medical consultation for use in some descriptive studies of outpatient consultations. The results from these descriptive studies will be discussed within the context of these models.

Chapter 6

Developing a measure of patient satisfaction

6.1 Introduction

As satisfaction with an outpatient consultation is one of the outcome measures of the planned studies, it was necessary to assess the validity and reliability of the satisfaction scales already developed. Given the tendency for participants to drop out of research carried out in hospital outpatient clinics where they are required to complete a questionnaire after their appointments, a brief questionnaire offers the possibility of reducing subject attrition rates (Wright, 1980). The aim of this initial study was to develop a brief, reliable and valid measure of patient satisfaction with a particular medical consultation.

As the research is concerned with patient satisfaction with outpatient hospital consultations as opposed to a general evaluation of doctors, the health care service, or a particular facility, the Medical Interview Satisfaction Scale (MISS) developed by Wolf and colleagues (1978) was used as the basis for the multi-item satisfaction scale.

Reliability of the scales was assessed using the test-retest method. Internal reliability of the scales was assessed using Cronbach's alpha co-efficient of reliability. Three types of validity were assessed: concurrent, predictive and construct. Concurrent validity was assessed by measuring the relationship between the multi-item and the single-item scales and the relationship between both these scales and another brief satisfaction scale.

Predictive validity was assessed by examining the association between satisfaction scores on both the multi-item and single-item scales and two measures of behavioural intention. Intention to behave in a particular way was assessed as there was no time to examine actual behaviour. Social cognition models of behaviour in general and Fishbein and Ajzen's Theory of Planned Behaviour in particular suggest that an individual's intention to behave is a predictor of actual behaviour (Fishbein and Ajzen, 1975).

It was hypothesised that patients with higher scores on both scales would

(a) choose to see the same doctor again .

(b) intend to follow the advice given by that doctor.

(c) rate the visit to the doctor as more satisfactory than visits to other doctors.

The construct validity of the multi-item questionnaire is assessed using principal components analysis.

6.2 Method

6.2.1 Design

Patients completed one questionnaire immediately after their consultation with the doctor, prior to leaving the hospital. They were also asked to complete a second questionnaire sent out one week after the hospital appointment to be returned in a stamped addressed envelope.

6.2.2 Participants

Those eligible for participation were patients, fluent in English, attending the obstetric and

gynaecology clinic at a London teaching hospital between February and July 1988.

6.2.3 Measures

6.2.3.1 Multi-item satisfaction questionnaire

A pool of 37 satisfaction items was derived, adapting most from the MISS and writing some specifically for the questionnaire (see Table 6.1). Twenty items were worded positively and 17 were worded negatively. As in the original MISS each item was answered on a 6-point scale. The points were labelled: 6 = 'strongly agree', 5 = 'agree', 4= 'tend to agree', 3 = 'tend to disagree', 2 = 'disagree', and 1 = 'strongly disagree'.

6.2.3.2 Single-item satisfaction questionnaire

The question was worded "How satisfied were you with the visit to the doctor?" Patients answered on an eight-point response scale from 0-not at all satisfied to 7-completely satisfied.

6.2.3.3 Concurrent validation scale item

This item asked patients to compare their present visit with previous visits to other doctors. Patients were asked the following: "Consider this visit with other visits you have had to doctors. How does it compare?" Patients answered on a five-point scale: 1- 'much less satisfactory', 2 - 'less satisfactory', 3 - 'the same', 4 - 'more satisfactory', 5 - 'much more satisfactory'.

6.2.3.4 Behavioural intention

Two measures of behavioural intention were assessed. Patients were asked "If you had

a choice, would you choose to see this doctor again?" The three response options were "Yes", "Don't Mind", and "No". The second question asked "Do you intend to follow the advice given by the doctor?" Patients had a choice of four responses: "Yes", "Not Sure", "No" and "No advice was given".

6.2.4 Procedure

Ethical committee approval was sought and granted. Women were approached in the obstetrics and gynaecology clinics after they had booked in for their appointments and before they were seen by a doctor. When approached they were told the following: "We are currently conducting some research to look at patients' experiences of seeing the doctor. We are asking people from several clinics to complete a questionnaire for us on this subject. Would you be interested in taking part?". It was then explained to participants that they would be required to complete one questionnaire immediately after their consultation and a second, identical, questionnaire one week later which would be sent to them by post with a pre-paid envelope for reply.

6.2.5 Analysis

The data from the 53 questionnaires completed immediately after the consultation were analysed using principal components analysis. Factors with eigen values greater then 1.0 were retained and then rotated using the varimax procedure on the SPSSX package (Norusis, 1988). Due to the skewness in both the multi-item questionnaire and the single-item measure, nonparametric tests were used for the analyses and results are reported in terms of mean ranks. Chi-square tests were used where the data were categorical.

6.3 Results

6.3.1 Participants

Fifty-three of the 56 women approached agreed to take part in the study. Of the three who did not participate, two were not fluent in English and the third had to leave immediately after her consultation. Fourteen participants completed the scale both immediately after the consultation and one week later when questionnaires were sent by post, giving a postal response rate of 26%.

6.3.2 Multi-item questionnaire

6.3.2.1 Construct validity

The principal components analysis of the multi-item questionnaire gave a solution of 18 items loading on one component factor (14 items with positive loading and four with negative loading) accounting for 65.7% of the variance (see Table 6.1).

6.3.2.2 Reliability

Item test-retest reliability performed on each of the 18 items revealed that two of the items (one positive and one negative) had low test-retest reliability ($p>0.05$) so they were removed from the scale. The 16 items remaining in the scale had test-retest reliabilities that ranged from 0.45 to 0.93 (see Table 6.1). The multi-item scale showed very good internal reliability, (Cronbach's alpha = 0.9). Spearman's rho was used to examined test-retest reliability, which was also very good (rho=0.89 $p<0.0001$).

A satisfaction score was computed for each participant using the 16 item solution from the varimax rotation (negative items were reverse-scored).

Table 6.1 Factor loadings after principal component analysis with varimax rotation and test-retest reliability for each of the items in the original questionnaire. The hash (#) on the left indicates the 16 items selected for the final questionnaire.

Question	Factor Loading	Test-Retest Reliability
# 1. After talking to the doctor, I feel much better about my problems.	.80	.89***
# 2. The doctor told me about my condition in words I could understand.	.59	.76***
3. I did not get a chance to say what was really on my mind.	-.30	.72***
4. I feel the doctor's check-up could have been more thorough.	.00	.59*
# 5. The doctor examined me very gently.	.58	.68**
# 6. The doctor told me all I wanted to know about my condition.	.77	.86***
7. After talking to the doctor I still don't know how serious my condition is.	.38	.79***
# 8. The doctor just didn't seem to understand me.	-.60	.45*
# 9. I feel that this doctor really knew how I felt about my condition.	.78	.84***
10. I felt free to talk to the doctor about private thoughts.	.49	.54*
11. Despite talking to the doctor, I still don't know what changes to expect in my health over the next few weeks and months.	-.39	.85***
12. The doctor was not interested in the problems I mentioned.	-.36	.92***
13. The doctor told me how my condition would affect my ability to work.	.35	.67*
# 14. I felt that this doctor accepted me as a person.	.78	.85***
15. I am not at all satisfied with the doctor's decision about what medicines I need to take.	-.33	.44
16. The doctor did not explain the reasons for the medical tests.	.00	-.22
17. The doctor seemed to have plenty of time to examine me.	.38	.86***
# 18. The doctor relieved my worries about my condition.	.59	.85***
19. I felt the doctor did not spend enough time with me.	-.30	.90***
20. I felt that the doctor did not take my problems seriously.	.00	.88***
# 21. The doctor gave clear directions when examining me.	.56	.61**
22. The doctor was friendly to me.	.61	.34
23. The doctor did not tell me enough about the medicine I am to take.	-.62	.14
# 24. The doctor made me feel very uneasy.	-.83	.73***

Table 6.1 continued

Question	Factor Loading	Test-Retest Reliability
25. The doctor seemed to know what (s)he was doing during the examination.	.44	.55*
# 26. I feel I understand the doctor's plan for helping me.	.75	.69***
27. The doctor used words which I could not understand.	.00	.74***
28. I felt embarrassed during the consultation.	.00	.57**
29. The doctor I saw today would be someone I would trust with my life.	.45	.41
# 30. The doctor saw me as an individual.	.78	.93***
31. The doctor was not at all interested in what I had to say.	-.38	.78***
32. The doctor's skill during the consultation left a lot to be desired.	-.38	.78***
33. The doctor let me finish what I had to say.	.40	.88***
# 34. I feel that the doctor should have told me more.	-.63	.66
# 35. I feel very satisfied with the consultation with the doctor.	.73	.88***
# 36. The doctor understands my main concern.	.63	.93***
# 37. The doctor gave me time to say what I was concerned about.	.64	.79***
* = $p < 0.05$ ** = $p < 0.01$ *** = $p < 0.001$		

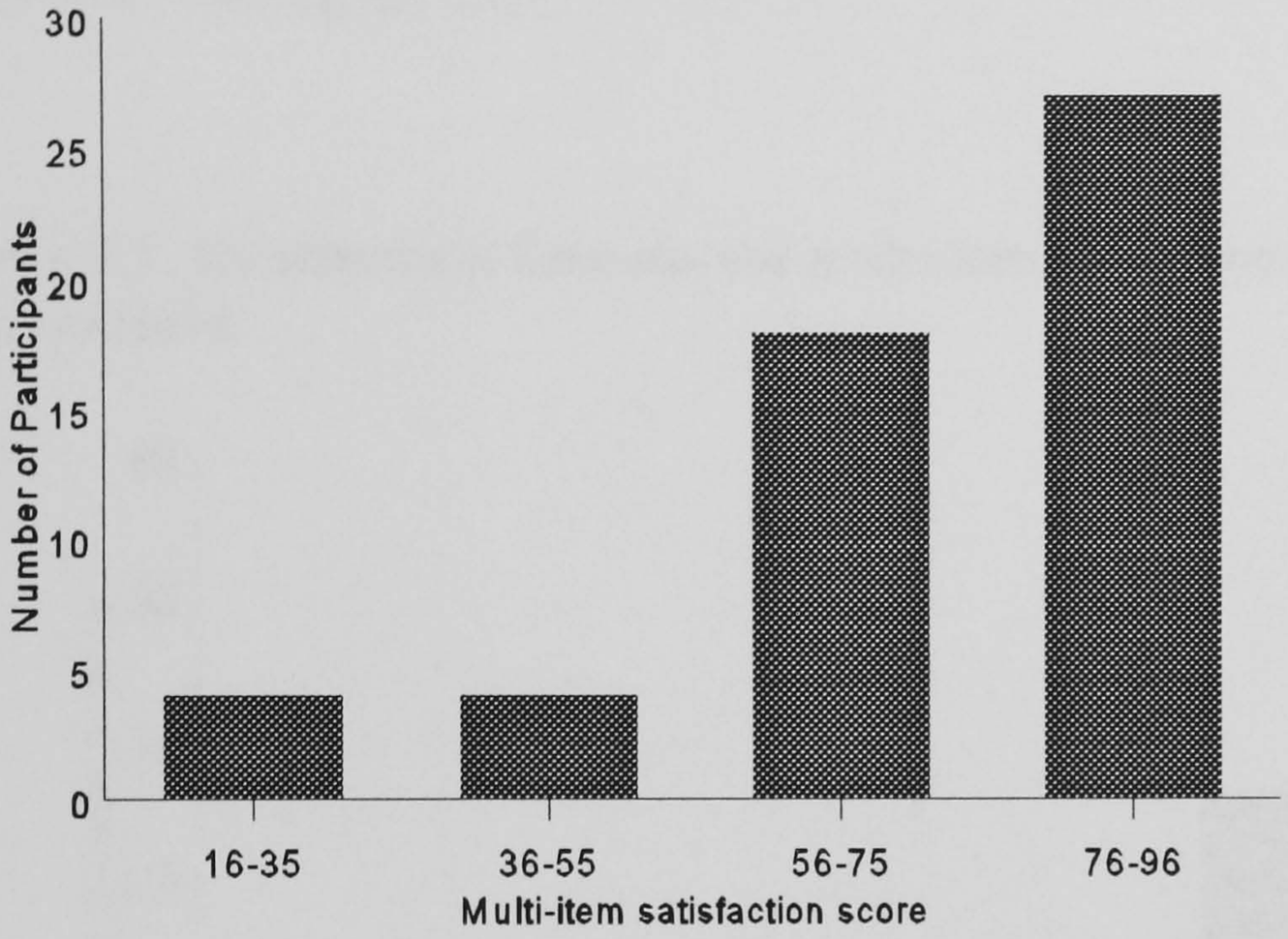
6.3.2.3 Range

The observed range for the multi-item satisfaction scale with 16 items was 24 to 96 with a mean of 72.5 and a standard deviation of 18.3 (n=53). The distribution of scores was skewed to the satisfied end of the scale with five people scoring the maximum of 96. The coefficient of skewness = -0.99 (see Figure 6.1).

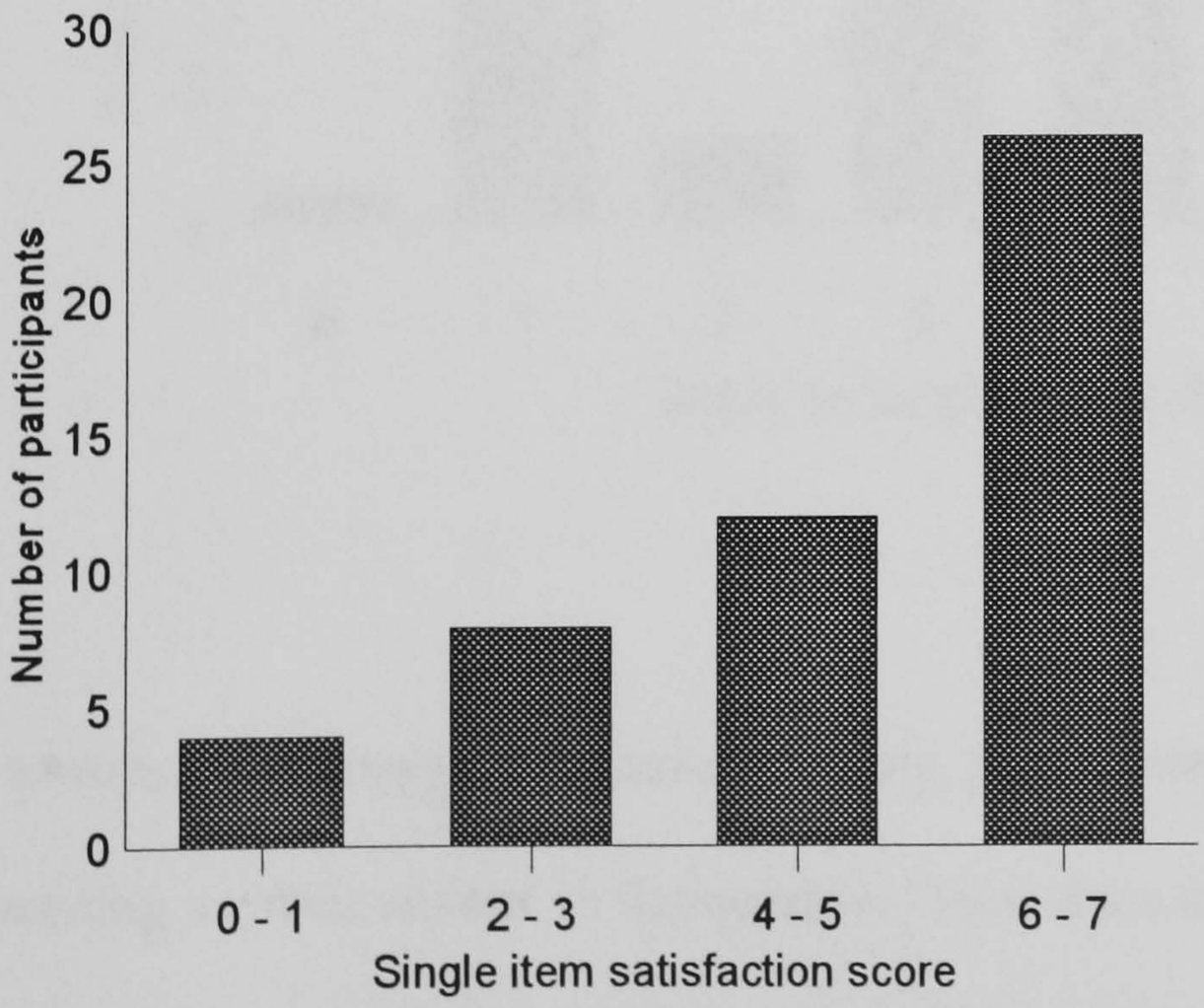
Figure 6.1 Skewness of the satisfaction data

Number of participants in each band of satisfaction for both the multi-item satisfaction score and the single-item measure

Multi-item satisfaction score
$\bar{x}$ = 72.5 (sd 18.3) (n=53) (Satisfaction increases as the score gets larger)



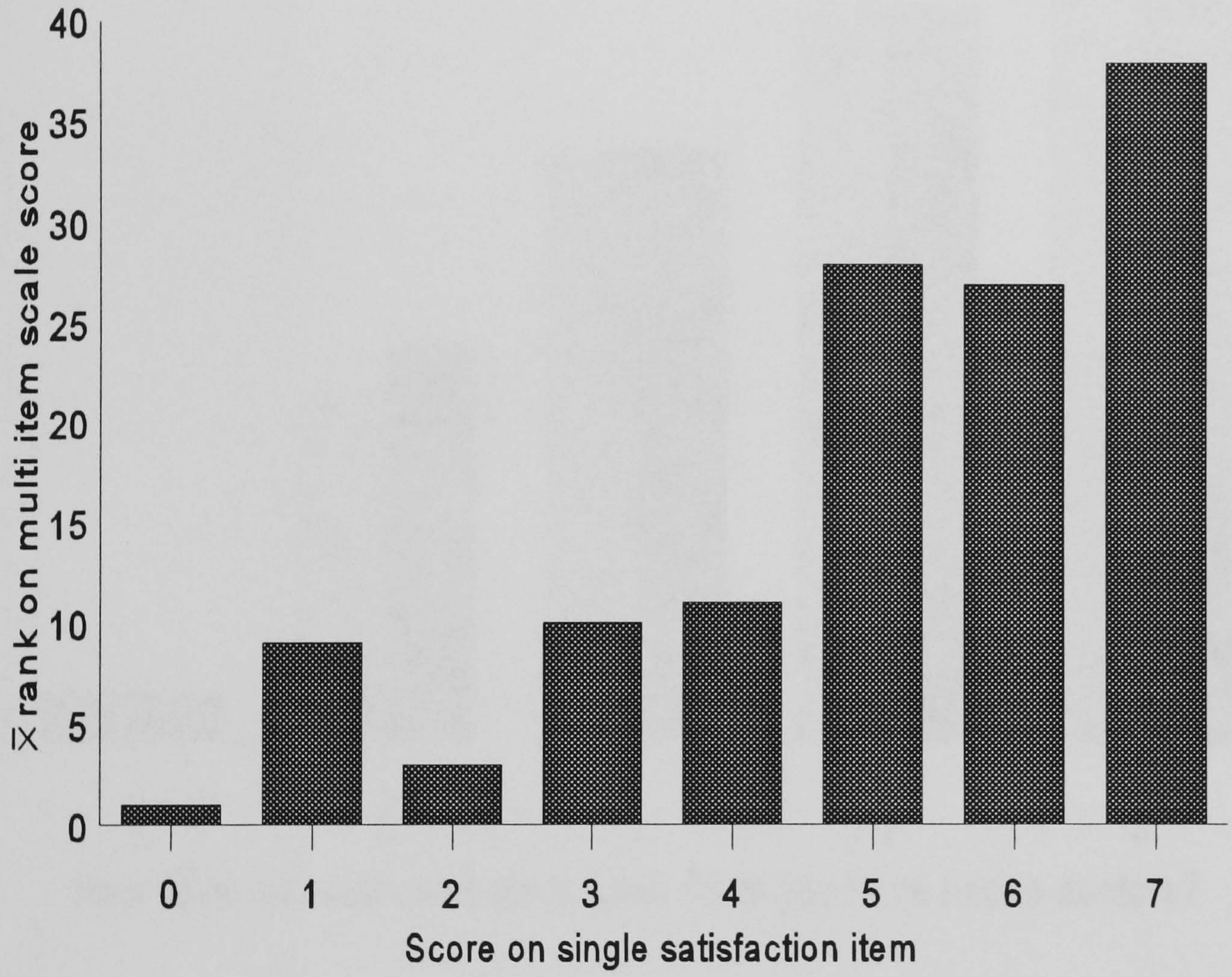
Single-item satisfaction score
$\bar{x}$ = 5.1 (sd 2.0) (n=50) (0 = not at all satisfied, 7 = extremely satisfied)



6.3.2.4 Concurrent validity

There was a high correlation between satisfaction scores on the 16-item scale and the single-item measure of satisfaction (Spearman's rho=0.79, $p<0.0005$). As participants' satisfaction increased on the multi-item scale so too did their satisfaction scores on the single-item (see Figure 6.2).

Figure 6.2 Relationship between the multi-item satisfaction score and the single-item measure

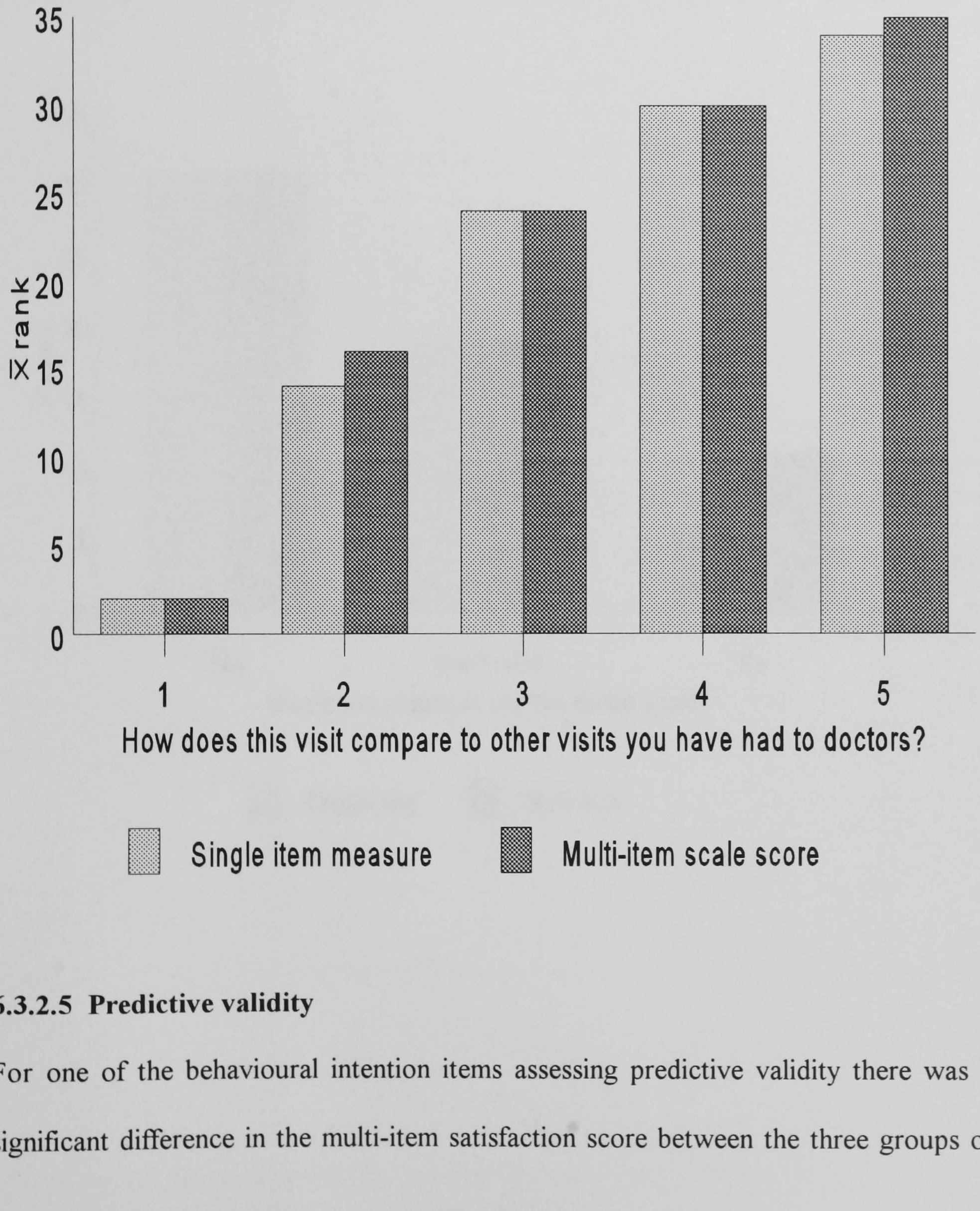


As a second assessment of concurrent validity, participants were divided into five groups depending on their answer to the question "How does this visit compare to other visits you have had to doctors?" There was a significant difference between the groups. The more the present visit compared favourably to previous visits the more satisfied patients

were: (Chi-square =15.5; df=4: $p<0.005$) (see Figure 6.3).

Figure 6.3 Relationship between satisfaction measures and the cross validation item "Consider this visit to other visits you have had to doctors. How does it compare?

Key: 1 - 'much less satisfactory', 2 - 'less satisfactory', 3 - 'the same',
4 - 'more satisfactory', 5 - 'much more satisfactory'.

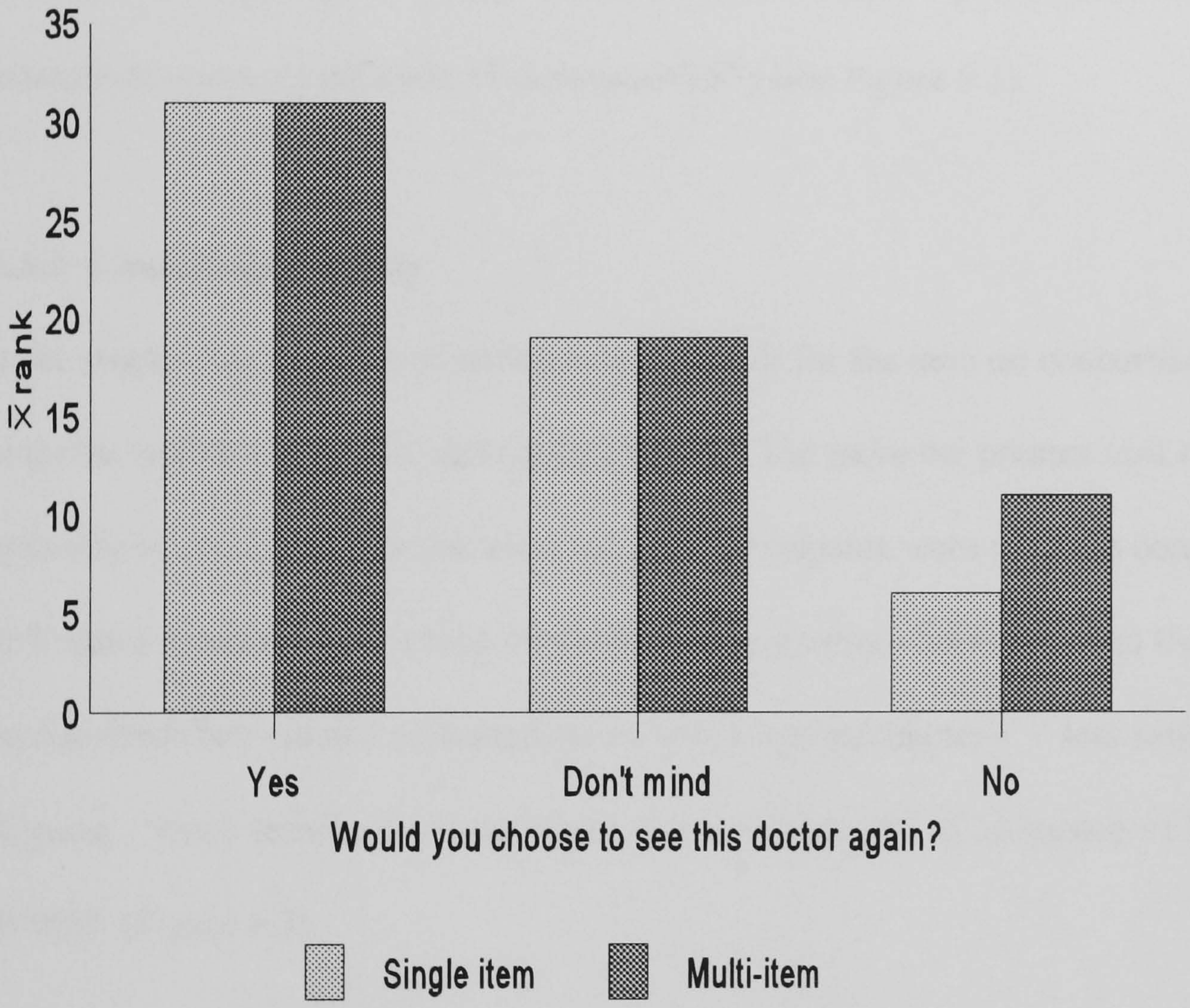


6.3.2.5 Predictive validity

For one of the behavioural intention items assessing predictive validity there was a significant difference in the multi-item satisfaction score between the three groups of

participants: those who chose to see the same doctor again, those who would not mind, and those who would not choose to see the same doctor again (Chi-square =14.5; df=2; $p<0.005$). Women who would choose to see the same doctor again had a higher mean rank than those replying "don't mind" and those who answered "no". (See Figure 6.4).

Figure 6.4 Relationship between the satisfaction measures and the predictive validity item "If you had a choice, would you choose to see this doctor again?"



6.3.3 Single-item measure

6.3.3.1 Reliability

Test-retest reliability was high: Spearman's rho = 0.86, p<0.0001.

6.3.3.2 Range

The observed range for the single-item measure was 0 to seven with a mean of 5.1 and a standard deviation of 2.0 (n=50). As with the multi-item questionnaire, the distribution of scores was skewed to the top end of the scale with 19 participants scoring the maximum of seven, (coefficient of skewness=0.87).(see Figure 6.1).

6.3.3.3 Concurrent validity

For the single-item measure of satisfaction the result for the item on concurrent validity was similar to that of the multi-item questionnaire. The more the present visit compared favourably to previous visits the more satisfied participants were with the consultation. There was a significant difference between the five groups, that is between the patients who described their current consultations as 'much less satisfactory', ' less satisfactory', 'the same', 'more satisfactory' and 'much more satisfactory' (Chi-square =17.2; df=4; p<0.005) (Figure 6.3).

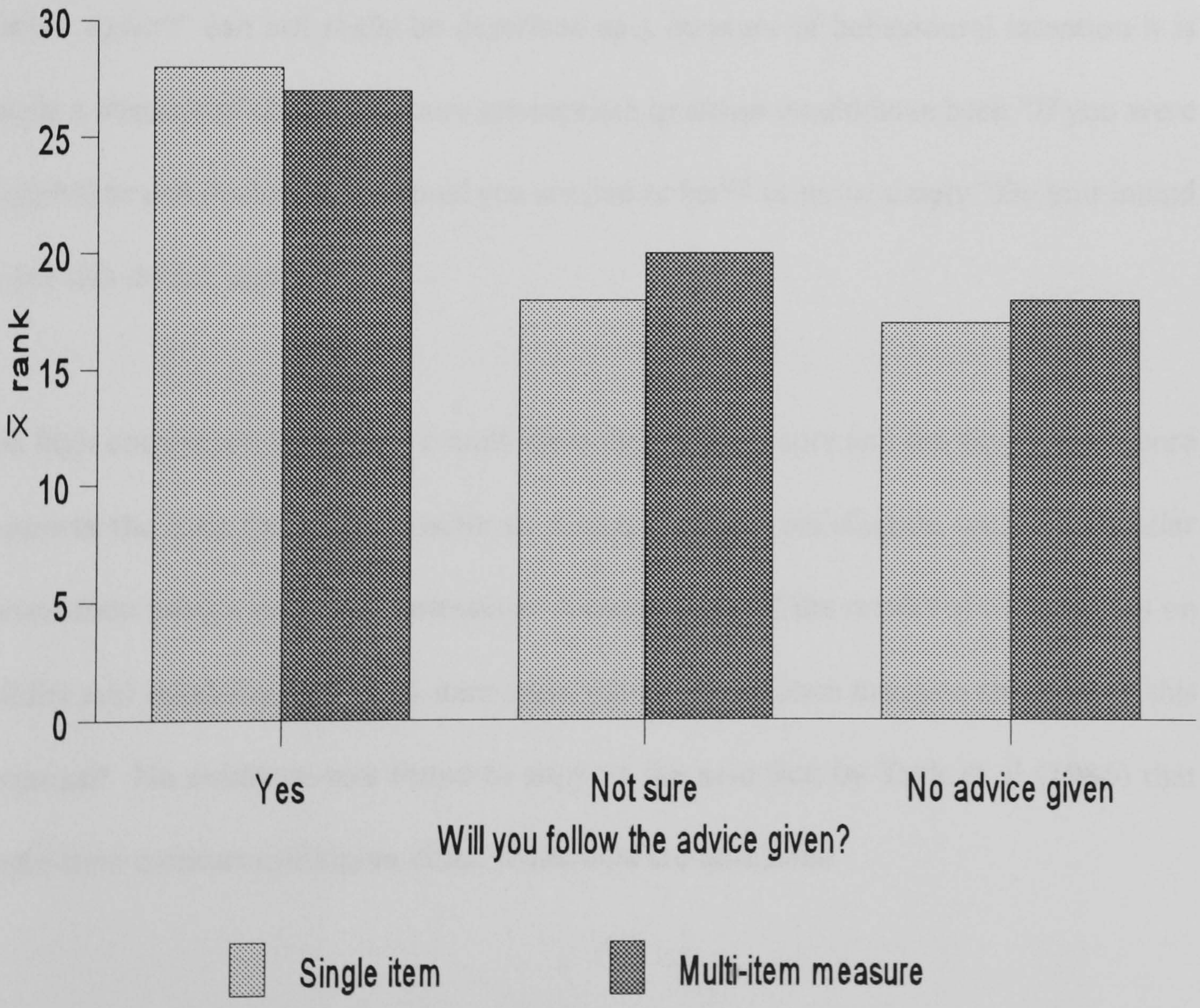
6.3.3.4 Predictive validity

The same pattern of results was obtained for the single-item measure as for the multi-item questionnaire in relation to choice of doctor for future consultations. Women who said they would choose to see the same doctor again had a higher mean rank than those who said they didn't mind, who, in turn, had a higher mean rank than those who said no (Chi-

square =19.5; df=2; p<0.005) (Figure 6.4).

A significant difference between groups was found on the second behavioural intention measure: intention to follow advice given. Women who replied "yes they would follow the advice given" had a higher mean rank on the single-item measure of satisfaction than the women who said they were "not sure". This second group had a higher mean rank than the women who replied "no advice was given" (Chi-square = 6.8; df=2; p<0.05) (Figure 6.5).

Figure 6.5 Relationship between the satisfaction measures and the predictive validity question "Do you intend to follow the advice given by the doctor?"



6.4 Discussion

6.4.1 Current study

A scale of 16 items was identified which measures a unitary satisfaction dimension. The scale shows evidence of internal reliability and test-retest reliability. There is also evidence that the scale is valid, given that two of the three validity criteria were met. The 16-item and single-item scales were highly correlated. The single-item measure of satisfaction also shows evidence of test-retest reliability and all three of the validity criteria were met.

In the development of the questionnaire, two variables were included to assess behavioural intention. On reflection, the question,"If you had a choice, would you choose to see this doctor again?" can not really be described as a measure of behavioural intention it is simply a measure of choice. A more appropriate question would have been "If you were allocated to that doctor again, would you see him or her?" or more simply "Do you intend to see this doctor again?"

The high correlation between the multi-item satisfaction score and the single-item score supports the idea that it is possible to measure patient satisfaction with a particular consultation using a single-item measure. A comparison of the results of the analyses on validity and reliability for the 16-item scale and the single-item measure strengthens this proposal. No evidence was found to support the assertion by Turk et al (1986) that single-item measures of higher order constructs are unreliable.

One difficulty in interpreting the results is that only 14 participants completed the

questionnaire on both occasions. This presents a potential for bias in the data. Comparisons on both the multi-item questionnaire and the single-item satisfaction scale between the group of women who completed only the questionnaire at the clinic and those who completed both questionnaires, revealed no difference in their levels of satisfaction at the time of the clinic visit. An additional check was made for bias on the sample of women completing questionnaires at both time points by comparing their satisfaction scores at the time of the clinic visit and their satisfaction scores one week later. No difference was found between their levels of satisfaction at the two time points. Although the test-retest sample is small, there is no evidence that it was biased.

Women reported high levels of satisfaction with the consultations in the studied outpatient clinic. Such a skewness of the data is common when patient satisfaction is examined. Patients often report very little dissatisfaction with medical care (Raphael, 1967, Hulka et al, 1970,1975, Kincey, Bradshaw and Ley, 1975, Rashid et al, 1989). Section 6.4.2 explores possible reasons for the high level of satisfaction. By contrast dissatisfaction with information has been frequently reported (Ley, 1988, Williams, 1993).

6.4.2 Levels of satisfaction

As noted above, the skewness of the data reported here is not unusual when reporting on patient satisfaction. Three reasons that are most pertinent to the skewness of the data observed in this study concern methodology, sample characteristics and the social context.

The type of response scale used in the study may have contributed to the skewness of the data. As noted in Chapter 2, Ware and Hays (1988) examined the effects of using a 5-

point, compared with a 6-point, response scale. The results indicated an advantage for the 5-point response scale although it is unclear whether the differences noted between the two scales are attributable to the number of points or to the labels attached to the points, which varied in the two forms of the scale. The multi-item questionnaire has a six-point scale on which participants were asked to rate how much agreement they had with a particular statement and the single-item measure had an eight-point response format related to level of satisfaction with the consultation. Before any decision can be made on the most suitable number of points to have on a response scale, it is necessary to compare five, six, seven and eight-point scales with the same labels expressing the same concept, whether it is satisfaction or agreement.

Another contributory factor to the observed skewness of the study data could be the characteristics of the study population. Due to the nature of the clinic the study was carried out in, all the respondents were female. Although only about half of the studies that examined gender as an independent variable report a significant effect, any difference that is found is consistently in the direction of women reporting higher levels of satisfaction than men.

The social context of care may also exert an influence upon patients not to report dissatisfaction with care received. Cohen (1971) found that the idea of evaluating a service was alien to respondents and that there was a tendency for respondents to avoid being critical of a service provided by someone who was liked. This pressure may explain why responses to the statement "the doctor was friendly to me" were unreliable: at the second time of testing, subjects were less likely to agree with the statement.

Three further explanations for the observed high levels of satisfaction with a medical consultation should also be considered: fears about confidentiality, cognitive dissonance and, the finding being valid.

Patients may fear, despite assurances that their answers are confidential, that expressions of dissatisfaction may be reported back to clinicians which might jeopardise any future treatment. Alternatively patients may report high levels of satisfaction to prevent a state of cognitive dissonance. Most patients have invested time and effort to attend a clinic, and they may need to believe that this effort is worthwhile and that the care they received was good.

The sixth reason for high levels of satisfaction is that the care received was good, the consultation went well and patients' expectations were met, making the high levels of reported satisfaction a valid finding.

6.5 Conclusion

The data reported here suggest that a 16-item questionnaire measuring patient satisfaction with a particular consultation has a reasonable level of reliability and validity and is similar to a single-item measure.

With the emphasis in this thesis on research in outpatient clinics, where the element of time to complete questionnaires may be crucial to study attrition rates it is proposed to use the single-item measure.

Chapter 7

Measures of doctor satisfaction: a review

7.1 Introduction

One of the most frequently examined outcome variables in health services research is patient satisfaction (see Chapter 1). To gain a more complete understanding of the impact of a medical consultation and the communication that takes place within it, a second outcome variable which requires examination is that of doctor satisfaction with the medical consultation. Such an examination of how both members of the dyad view the consultation may reveal differences and similarities both in the perception of what occurs and the value placed on components of the interview, either or both of which may affect patient satisfaction, as predicted by the Doctor-Patient Satisfaction Model (Koehler, Fottler & Swan, 1992, Chapter 5).

Most research on doctor satisfaction has been conducted in the broader context of occupational satisfaction (Winefield, Murrell & Clifford, 1994, Cook, Griffith & Sackett, 1995). This has focused upon the speciality of the doctor (Mawardi, 1980); characteristics of the job (Peters and Markello, 1982, Linn et al, 1985); features of the practice setting (Breslau, Novack and Wolf, 1978, Reid, 1979, Stamps et al, 1978, Engel, 1969, Lichtenstein, 1984); type of illness (Reynolds and Bice, 1971); degree of control (Nathanson and Becker, 1972); and relationships with other health care professionals (Reid, 1979).

In a study of job satisfaction of doctors in primary patient care Ford and colleagues, (1967) reported that effective communication with patients and the quality of the relationships with those they take care of, were the most satisfying aspects of the role of primary care physicians. Such research does not, however, promote understanding of the process, content and impact of medical consultations upon doctors.

This chapter reviews published studies of doctor satisfaction with a specific medical consultation. The same procedure and criteria for the selection of studies was used as for patient satisfaction (see Chapter 3) with the exception that the keyword used was doctor satisfaction.

Eleven papers containing an assessment of doctor satisfaction with medical consultations were found (see Table 7.1). These papers were published between 1976 and 1994 in the UK, USA, Australia and Sweden. To draw parallels with the patient satisfaction literature a similar structure is used to describe the studies to that used in Chapter 3. Section 7.2 considers the definition of doctor satisfaction and Section 7.3 examines measurement of doctor satisfaction, specifically item generation and selection used in these studies. Section 7.4 examines the psychometric properties of the scales and Section 7.5 discusses some additional difficulties. Section 7.6 draws conclusions.

7.2 Doctor satisfaction: definitions

None of these eleven studies of doctor satisfaction provided a definition of the concept. Examining doctor-patient satisfaction and the association with perceived equity in health encounters, Koehler, Fottler and Swan (1992) suggested that doctor satisfaction is "the

Table 7.1 Studies of doctor satisfaction with a specific medical encounter

Key: NR = Not reported

	Cartwright 1976 UK	**Weinberger, Greene and Mamlin 1981 USA**	**Shore and Franks 1986 USA**	**Sensky, Dennehy, Gilbert, Begent, Newlands, Rustin and Thompson 1989 UK**
Number of Dimensions	One-item scale	One-item scale	Four hypothesised Interactive Personal Professional Contextual Two at end of development Patient-related Contextual	One-item scale
Reliability	NR	NR	Total at beginning 43 items α= 0.90 Patient-related α = 0.89 Contextual α= 0.63 Total (16 items) α= 0.85	NR
Validity	NR	NR	Concurrent	NR
Where assessment carried out	In general practitioners surgery	In clinic	NR	In clinic
How long after appointment	At end of surgery session	Immediately	NR	Immediately
Type of assessment	Questionnaire	Questionnaire	Questionnaire	Questionnaire
Response Scale	4 point: Very satisfactory - Definitely unsatisfactory	NR	Likert scale: 5 -point	Visual-analogue scale
Response Bias	NR	NR	Equal number of positive and negative items	NR
Readability	NR	NR	NR	NR
Layout	NR	NR	NR	NR
Placement	NR	NR	NR	NR
Patient type	More than 65 years of age	Medical outpatients 75% female 70% black	NR	Oncology outpatients at follow-up appointments
Number of participants	40 General practitioners 103 Patients	20 Hospital based doctors 82 patients	131 doctors - 37 Family Medicine - 50 Internal medicine - 44 Paediatricians	6 Oncologists 149 patients

Table 7.1 continued

	Rashid, Forman, Jagger and Mann 1989 **UK**	**Thompson, Nanni and Schwankovsky 1990** **USA**	**Winefield and Murrell 1991** **Australia**	**Lewis, Pantell and Sharp 1991** **USA**
Number of dimensions	One (13 items)	Two-item scale	Study 1 - One-item scale Study 2 - One-item scale	One (13 items)
Reliability	NR	NR	NR	$\alpha = 0.86$
Validity	NR	NR	NR	NR
Where assessment carried out	NR	In clinic	In clinic	NR
How long after appointment	NR	Immediately	Immediately	NR
Type of assessment	Questionnaire	Questionnaire	Questionnaire	Questionnaire
Response Scale	Yes/No	7 point scale: Very unsatisfied - Very satisfied	Study 1: 7 point scale Extremely satisfied - Extremely dissatisfied Study 2: 11 point scale 0 - completely unsatisfying 5 - average in satisfaction 10 - completely satisfying	5 point scale 5 = high satisfaction
Response Bias	NR	NR	NR	NR
Readability	NR	NR	NR	NR
Layout	NR	NR	NR	NR
Placement	NR	NR	NR	NR
Patient type	NR	NR 100% female	Study 1 - 57 % female 28% more than 50 years old Study 2 - 58% female 34% more than 50 years old	46% female 6 - 17 years of age
Number of participants	5 General practitioners 250 patients	1 Obstetrician/ gynaecologist 53 patients	Study 1 5 general practitioners 30 patients Study 2 7 general practitioners 38 patients	34 paediatricians (50% female) 141 patients

Table 7.1 continued

	Arborelius and Bremberg 1992 **Sweden**	**Suchman, Roter, Green, Lipkin and the Collaborative Study Group of the American Academy on Physician and Patient 1993** **USA**	**Greene, Adelman, Friedman and Charon 1994** **USA**
Number of Dimensions	Two-item scale	Four Patient/doctor relationship Data collection process Appropriate use of time Patient's cooperative nature	Two-item scale
Reliability	NR	Patient/doctor relationship $\alpha = 0.72$ Data collection process $\alpha = 0.74$ Appropriate use of time $\alpha = 0.69$ Patient's cooperative nature $\alpha = 0.65$	$\alpha = 0.74$
Validity	NR	Construct Face	NR
Where assessment carried out	In clinic	In clinic	In clinic
How long after appointment	Immediately	Immediately	Immediately
Type of assessment	Questionnaire	Questionnaire	Questionnaire
Response Scale	4 point scale	Likert scale: 5-point	How strongly agree or disagree (no scale specified)
Response Bias	NR	NR	NR
Readability	NR	NR	NR
Layout	NR	NR	NR
Placement	NR	NR	NR
Patient type	20 - 97 years of age	Adults with chronic disease (with at least two previous visits) 58% female 55% white	'New' patients More than 60 years of age 79% female 72% black
Number of participants	12 general practitioners (50% female) 46 patients	124 doctors in total (from hospital outpatient clinics and private practices) 21% female 95% white 527 patients	18 hospital based general medical doctors 50% female 81 patients

doctor's affective response to his/her practice experience, and is determined by how expectations are disconfirmed through the results of practice". Two studies (Winefield and Murrell, 1991, Suchman et al, 1993) provided a rationale for measuring doctor satisfaction. Winefield and Murrell (1991) believed that the quality of the helping relationship which develops between participants in a general practice consultation could be assessed by satisfaction measures and that it would be useful for doctors to be able to judge how well a helping relationship with a patient was being established from information immediately available during the consultation. Suchman and colleagues (1993) believed that doctor satisfaction was important as it provides additional insights into the doctor-patient relationship and can reflect and shape what happens both within and after a consultation.

7.3 Generation and selection of items

Four studies assessed doctor satisfaction using multi-item scales, two of which considered doctor satisfaction to be uni-dimensional (Lewis, Pantell & Sharp, 1991, Rashid et al, 1989). The generation and selection of items for the questionnaire was described in one study, Shore and Franks (1986). They used the Delphi method to identify dimensions of doctor satisfaction and the items comprising the questionnaire. The initial questionnaire contained 43 items in four dimensions: interactive, personal, professional and contextual. Factor analysis and reliability checks on the dimensions and items resulted in a final questionnaire of 16 items loading on two dimensions, patient-related and contextual. (See Table 7.1).

One study (Suchman et al, 1993) developed a 19-item questionnaire and used it

together with a single global satisfaction item. The generation of the initial items is not described. They subjected the 19-item scale to principle components factor analysis with varimax rotation and reported a final questionnaire of 13 items loading onto four factors, patient doctor relationship, data collection process, appropriate use of time and patient cooperative nature.

Seven studies assessed doctor satisfaction with the consultation using either one or two-item measures. The items were either global and asked about the visit overall, such as "How satisfied are you with the visit in general?" (Thompson, Nanni & Schwankovsky 1990) or examined a particular aspect that the authors were interested in, "How satisfied are you with the help you gave the patient?" (Arborelius & Bremberg 1992). Information on the exact content of the question(s) assessing doctor satisfaction was not provided in four of the studies (Weinberger, Green & Mamlin, 1981, Sensky et al, 1989, Winefield & Murrell, 1991, Lewis, Pantell & Sharp, 1991). Three studies used similar wording to assess doctor satisfaction. Cartwright (1976) asked doctors "What do you feel about this consultation as a whole?", doctors replied on a 4-point scale labelled at one end 'Very satisfactory' and at the other 'Definitely unsatisfactory'. Thompson, Nanni and Schwankovsky (1990) "How satisfied are you with the visit in general?" and Winefield and Murrell (1991) asked about satisfaction with the consultation.

7.4 Psychometric properties

Reliability

Chapter 2 discusses the difficulties of assessing reliability for single-item measures. Four of the seven scales with more than one item reported Cronbach's co-efficient of internal

reliability. Three of the scales reported acceptable reliability (Shore and Franks, 1986, Lewis, Pantell & Sharp, 1991, Greene et al, 1994, (Chapter 2, Kline, 1993)). The fourth study (Suchman et al, 1993) reported acceptable reliability for three dimensions and a reliability of 0.65 for the fourth.

Validity

Shore and Franks (1986) reported assessing concurrent validity with the doctor answering four supplementary questions derived from the results of the study by Weinberger and colleagues (1981). The questions addressed how active the doctor felt in the encounter, the extent to which the doctor believed the patient was adherent, whether the doctor felt it necessary to make many facilitative remarks, and whether humour was used in the consultation.

A second multi-item questionnaire (Suchman et al, 1993) reported construct validity for the four dimensions given that the same dimensions were produced over a series of 10 replications of the factor analysis. Face validity was claimed as a function of the common ground shared with previously published measures and because the items in the scales were consistent with doctors' everyday experience.

Skewness

One study reported that 65% of their doctors were satisfied (Weinberger et al, 1981). Winefield and Murrell (1991) reported a marked positive skew in doctor satisfaction with the consultation. Using a 7-point scale, 60% of the consultations were given the maximum possible rating. In a second study assessing doctor satisfaction, with a different

sample of general practitioners, the use of an 11-point scale with an extra mid-range anchor point reduced the problem. Using this scale only about 25% of consultations were given the maximum rating. The doctors in the first study were described as doctors associated with teaching general practice while Weinberger and colleagues described the doctors in the second study as a more representative of general practitioners. Suchman and colleagues (1993) state that doctor satisfaction was positively skewed for all dimensions.

7.5 Difficulties

Apart from the shortage of information provided in most of the eleven studies other difficulties are associated with some of the scales (see Table 7.1). Of the 11 studies identified, Shore and Franks (1986) and Suchman and colleagues (1993) appear to have used the most thorough methodologies in the development of their scales. Shore and Franks (1986) acknowledge that the number of respondents, 49, who completed the questionnaire during the initial development was insufficient given that the questionnaire contained 43 items and that the authors were expecting to find four factors. A number of rules have been suggested on the size of the sample required to provide a stable factor pattern and these were reviewed by Guadagnoli and Velicer (1988). Some authors recommend that the sample size, (n) be determined as a function of the size of significance level (p) involved in the research problem with suggested n-to-p ratios varying from 2:1 to 20:1. Other authors recommend a minimum n of 100 to 200 observations; another rule suggests that n be determined as a function of the number of expected factors while the most familiar advice given is to obtain the maximum sample size possible. The conclusion by Guadagnoli and Velicer (1988) was that absolute sample size and the magnitude of

component loadings were the most important factors and they make suggestions on how these rules can be applied in practice.

Although Shore & Franks (1986) did have a small sample size, the variables had loadings of sufficient magnitude to suggest that the pattern found for the patient-related factor may be stable. The loadings on the contextual factor suggest that the result will be less stable given the small sample size. Suchman and colleagues had a larger sample size of 124 doctors and the loadings on all four dimensions were large enough to suggest that they are stable.

A number of data are missing which would help clarify the statistical properties of the questionnaire developed by Shore and Franks (1986). The article does not report on the amount of variance accounted for by each of the factors, the range of doctor satisfaction scores found, the mean scores for doctor satisfaction with the consultations, or whether the data were skewed. A smaller problem is that, in an effort to counteract any effect of response bias, the questionnaire contains nine positively worded and seven negatively worded items. The authors however fail to draw the readers attention to the need to reverse the scores for the negatively worded items.

Rashid and colleagues (1989) claim that the 13 items in their questionnaire assess satisfaction. The description of the study, however, suggests that they assessed whether doctors and patients agreed or disagreed over the presence or absence of various process and content components of a consultation. While agreement between doctor and patient on some components of a consultation does influence satisfaction (Starfield et al, 1979,

Starfield et al, 1981, Zimmerman, 1988, van Dulmen et al, 1994) they do not necessarily indicate a level of satisfaction. Several statistical methods exist whereby satisfaction could have been deduced from responses to the 13 statements; it is not clear from the article which method was used.

Three further problems concern the design of this questionnaire. All the statements were worded positively, some statements contained more than one element (for example "Did the doctor allow the patient to express any emotional feelings, worries, or frustrations?") and respondents could only answer Yes or No. This dichotomy may not reflect adequately what happens in a consultation.

The questions described as measures of satisfaction by Arborelius and Bremberg (1992) can best be described as possible correlates of satisfaction. The doctors replied to the statements "I look forward to seeing this patient again" and "This patient makes me feel good about being a doctor" neither of which are explicitly about satisfaction with the consultation.

7.6 Conclusions

Eleven studies were found that assessed doctor satisfaction with medical consultations. Most of the work has been carried out in outpatient clinics in the USA. The work in the UK has been carried out mainly with general practitioners. One noticeable difference between the questionnaires developed to assess doctor satisfaction and those developed to assess patient satisfaction is that most studies of doctor satisfaction work on the hypothesis that this concept is uni-dimensional. Consequently seven of the eleven studies

assess global satisfaction with consultations by single or two-item scales. From the information provided it is highly likely that the question(s) and response scales were different in every study.

Four studies developed multi-item questionnaires to assess doctor satisfaction. Lewis and colleagues (1991) considered their satisfaction scale as uni-dimensional and concentrated on how the doctor perceived the consultation eg "I was able to explain things well to this child". A second multi-item questionnaire was that developed by Rashid and colleagues (1989) which claimed to assess doctor satisfaction but actually assessed what patients and doctors perceived to have occurred during the consultation.

Two of the multi-item questionnaires considered doctor satisfaction as multi-dimensional. Shore and Franks (1986) concluded that doctor satisfaction was two dimensional: contextual and patient related. Suchman and colleagues (1993) reported four dimensions: satisfaction with the quality of the doctor-patient relationship, with the adequacy of the data collection process during the visit, that time was used appropriately during the visit and with the patient's non-demanding, cooperative nature.

There is little similarity between the items contained in these two multi-dimensional questionnaires. The questionnaire developed by Shore and Franks (1986) contained items relating to the doctor's assessment of his or her own reactions to the consultation (for example, I was disappointed), the patient's reaction to the consultation (for example, the patient was satisfied) and, of the interpersonal aspect of the consultation (for example rapport was high) as well as the affective state the doctor brought to the consultation (for

example, "other things on my mind", "I felt pressed"). The questionnaire by Suchman and colleagues (1993) concentrates on cognitions about different aspects of the consultation such as "I got all the detail I needed regarding the patient's history" and does not address the doctors' own feelings about him or herself, or the consultation.

As with patient satisfaction, there is a suggestion that doctor satisfaction tends to be skewed towards the positive end of the scale, most doctors reporting high degrees of satisfaction with their consultations. There is some evidence for one-item measures, where either labelling the mid-point of the scale, or extending the range may counteract this effect.

There are two possible reasons for doctors reporting high levels of satisfaction with medical consultations. Cognitive dissonance may explain part of it. Doctors will carry out between 120,000 and 160,000 interviews during a 40-year career (Lipkin et al, 1995) if they do not find this element of their job satisfying then they may well start to question why they are in their profession. Another possible explanation is that doctors may adjust their original views with regard to what makes a satisfactory consultation to take account of their past experience so that their expectations of consultations are more realistic and therefore more likely to be met. This suggests that doctors who have been in practice longer may be more satisfied than newly qualified doctors as they will have had more experience of consultations and more time to adjust their expectations. In the review of variables associated with doctor satisfaction in Chapter eight it was found that seniority of doctors was not related to doctor satisfaction but that older doctors were more satisfied with their consultations. This provides partial evidence for the above hypothesis.

With few studies on doctor satisfaction with specific medical consultations and the different methodologies used in the studies that have been reported, it is difficult to compare results either across countries, type of clinic, or time. Cartwright (1976) and Winefield and Murrell (1991) working 15 years apart report similar proportions (29% and 25%) of general practitioners giving their consultations the maximum possible rating, Weinberger and colleagues working in an hospital outpatient clinic in 1981 reported that 65% of the consultations they examined were viewed positively by the doctors in their study. It is not possible to determine if this difference is due to methodological differences, such as measures used, or populations sampled.

The questionnaire developed by Suchman and colleagues (1993) appears reliable and valid but as they point out further development is required to explore the impact of including items relating to the doctors' affective state during the consultation. The development of this questionnaire and that of Shore and Franks (1986) raises the issue of whether doctor satisfaction is best assessed in this way or whether a global satisfaction item will suffice. Suchman and colleagues (1993) compared their global satisfaction item with their four-dimensional scale and reported that the single item measure had greater variability than the subscales. They also reported that the four dimensions were intercorrelated and that the doctor-patient relationship dimension was the most important determinant of global satisfaction, accounting for 39% of the variance in the one-item measure. This result is consistent with that mentioned earlier where the quality of the relationship with patients was the most satisfying aspect of the role for primary care doctors (Ford et al, 1967). As with patient satisfaction the most appropriate assessment of doctor satisfaction will depend on the research question being investigated.

The apparent lack of interest in the subject of doctor satisfaction with specific medical consultations may be explained by two barriers to research in this area. One barrier is a practical one; doctors are not keen to participate in studies where they are the objects under scrutiny and therefore it is difficult to get large enough numbers of doctors involved in such studies. The second barrier is theoretical. Researchers often overlook the impact a doctor or health professional may have on a consultation. They assume perhaps that doctors work in a vacuum of affective neutrality and that doctors' behaviour is guided only by professional codes and knowledge (Marteau and Johnston, 1990). While there is at least one theoretical model of how doctor and patient interaction may affect each of their levels of satisfaction, neither this nor other models have informed research in this area.

Recognising and finding ways to overcome these barriers will lead to the development of measures that will allow robust research to understand doctors' subjective responses and determine how doctor satisfaction contributes to the process of a consultation and ultimately patient satisfaction with it.

Chapter 8

Variables associated with doctor satisfaction: a literature review

8.1 Introduction

As stated in the previous chapter, few studies of doctor satisfaction with medical consultations have been conducted and even fewer have examined variables associated with doctor satisfaction. It is possible that the same groups of variables associated with patient satisfaction with a consultation, may be associated with doctors' satisfaction with consultations.

8.2 Literature review

This chapter will present a review of studies of doctor satisfaction with a particular medical encounter. A search of the Medline and Psychological Abstracts databases from 1966 to 1994 with keywords "doctor satisfaction" identified several papers on the topic.

Papers were included in the review if:

i) They were published between 1976 and 1994.

ii) They were published in English.

iii) There were concerned with doctor satisfaction with a specific medical encounter.

Papers were excluded from this review if they belonged to one of five categories.

i) The paper described an intervention study.

ii) The paper described a study published earlier.

iii) The paper was concerned with doctor satisfaction in general.

iv) The paper was concerned with measuring satisfaction or modelling satisfaction with no examination of variables that may be associated with doctor satisfaction with a consultation.

v) The paper was concerned with a very specific question e.g Doctor satisfaction with their own performance in a bad news interview.

Studies on patient satisfaction with a consultation can be divided into two groups: those developing measures to assess satisfaction (Chapter three), and those that examine variables that may be associated with patient satisfaction (Chapter four). Studies on doctor satisfaction are more likely to both assess satisfaction and examine the variables associated with doctor satisfaction therefore the studies included in this review are a subset of those reviewed in Chapter seven.

Six studies were found that related to a specific medical encounter. Half of these studies examined general practice consultations and it was decided to include these in this review (see Table 8.1). This chapter presents results of the review examining the relationship between input and process variables and doctor satisfaction. Section 8.3 examines input variables and Section 8.4 examines process variables. The studies are discussed in Section 8.5 and conclusions are drawn in Section 8.6. Table 8.1 provides information on the number of participants in the studies, the context and country in which the study was conducted, together with information on the scale used to assess doctor satisfaction.

Table 8.1 Studies of doctor satisfaction with a specific medical encounter

Key: NR = Not reported

	Cartwright	Weinberger, Greene and Mamlin	Sensky, Dennehy, Gilbert, Begent, Newlands, Rustin and Thompson	Winefield and Murrell*	Arborelius and Bremberg	Suchman , Roter, Green, Lipkin and the Collaborative Study Group of the American Academy on Physician and Patient
Year Published	1976	1981	1989	1991 1992	1992	1993
Number of doctors (gender)	40 (NR)	20 (NR)	6 (NR)	5 (80% male.)	12 (50% male)	124 (79% male)
Number of con-sultations	103	82	149	1990 - 30 1992 - 143	24	527
Speciality of participants	General Practice	Internal Medicine	Oncology	General Practice	General Practice	Hospital outpatient clinics and private practice
Country	UK	USA	UK	Australia	Sweden	USA
How satisfaction assessed	Single-item global measure	Single direct question	Single-item global visual analogue scale	Single-item global measure	Rater judgement of consultation	19 item questionnaire with four dimensions

* Winefield and Murrell reported their study in a number of papers, providing information relevant to this review in two of them.

Twenty-nine percent of general practitioners described their consultations as satisfactory in a study carried out in the UK in 1964 by Cartwright (1976). In a study of hospital consultations in the USA, Weinberger and colleagues (1981) reported that 65% of consultations were perceived positively by doctors. Sensky and colleagues (1989) were interested in doctors' accuracy in assessing their patients' emotional states and examined

the data for associations between perceived emotional state and patient and doctor satisfaction. Winefield and Murrell (1991) divided the consultation into diagnostic and prescriptive stages and examined the impact of speech patterns upon Australian general practitioners' satisfaction with consultations. They compared the 60% of consultations described as extremely satisfactory by general practitioners with the 40% described less favourably. In Sweden in 1992 Arborelius and Bremberg examined whether the completion of five tasks identified by Pendleton and colleagues (1984) as necessary for a satisfying and efficient consultation was associated with doctor satisfaction. Twelve consultations that were categorised as positive by both participants in the consultation were compared with the 12 that were categorised as negative by both doctor and patient. Suchman and colleagues (1993) were interested in developing a measure of doctor satisfaction with hospital consultations and in the process examined several independent variables as predictors of this dependent variable.

8.3 Input variables

As with patient satisfaction these variables were divided into three groups: contextual, demographic, cognitive and affective. Appendix seven lists the contextual variables, Appendix eight lists the demographic variables and Appendices nine and ten list the cognitive and affective variables that have been examined for their associations with doctor satisfaction. Input variables were examined in five of the six studies.

8.3.1 Contextual variables

Thirteen variables were examined over five of the six studies. Each of the variables has been examined once. Seven variables were reported to have no association with doctor

satisfaction and six were associated with doctor satisfaction.

Number of items prescribed. Doctors were less satisfied if they gave a prescription for two or more items (Cartwright, 1976).

Doctor on call. Doctors were less satisfied if they had been on call (Weinberger, Greene & Mamlin, 1981).

Time of appointment. Doctors were less satisfied with consultations held later in the day (Sensky et al, 1989).

Physical examination occurred. Doctors were more satisfied if a physical examination occurred during the consultation (Winefield and Murrell, 1991).

Prescription given. Doctors were more satisfied when they handed out a prescription in the consultation (Winefield and Murrell, 1991).

Previous visits. Doctors were more satisfied the higher the number of previous visits the patient had made (Suchman et al, 1993).

Summary

It is difficult to draw conclusions from this small amount of data but there is a suggestion that doctors are more satisfied with consultations that meet their expectations of what should happen in a consultation such as carrying out a physical examination and writing a prescription.

8.3.2 Demographic variables

Appendix eight lists the demographic variables related to both the patient and the doctor that have been examined for associations with doctor satisfaction with the consultation. Seven variables have been examined, four related to the patient and three with the doctor

(see Appendix eight).

Three of the demographic variables have been examined twice.

Patient age. Both studies report no association with doctor satisfaction (Winefield and Murrell, 1991, Suchman et al, 1993).

Patient gender. Both studies report no association with doctor satisfaction (Winefield and Murrell, 1991, Suchman et al, 1993).

Seniority of the doctor. Both studies report no association with doctor satisfaction (Weinberger, Greene & Mamlin, 1981, Suchman et al, 1993).

Two variables, examined only once, were reported as associated with doctor satisfaction.

Patient race. On one dimension of satisfaction (data collection) doctors were more satisfied with white patients (Suchman et al, 1993).

Doctor age. Older doctors were more satisfied than younger doctors on one dimension (data collection) of satisfaction (Suchman et al, 1993).

Summary

There is little evidence to suggest that demographic variables of the patient or doctor are associated with doctor satisfaction with a specific medical encounter.

8.3.3 Cognitive and affective variables

Four of the six studies examined the association between cognitive and affective variables and doctor satisfaction. Three affective and one cognitive variable relating to patients (see Appendix nine) and 12 variables relating to doctors (see Appendix ten) have been

examined. One study examined cognitive and affective aspects of both doctors and patients, one study examined variables related only to patients and two studies examined variables related only to the doctor. Three variables were examined twice.

Cognitive and affective variables of the patient.

Patient satisfaction with the consultation. This was examined twice. One study reported no association between patient satisfaction with the consultation and doctor satisfaction with the consultation (Winefield and Murrell, 1991). The second study reported a positive association, doctors reported higher levels of satisfaction with consultations that patients reported as more satisfying (Sensky et al, 1989)

The other variable reported to have an association with doctor satisfaction was depression in patients. Doctors were less satisfied with consultations in which patients described themselves as depressed (Sensky et al, 1989).

Cognitive and affective variables of the doctor.

Perception of patient as anxious. In both studies doctors were less satisfied with consultations in which they perceived the patient as being more anxious (Sensky et al, 1989, Suchman et al, 1993).

Perception of patient as depressed. In both studies doctors were less satisfied with consultations in which they perceived the patient to be depressed (Sensky et al, 1989, Suchman et al, 1993).

Eight of the ten remaining variables examining doctors' perception of themselves or their

patients were associated with doctor satisfaction with the consultation (see Appendix ten). Doctors reported higher levels of satisfaction when they perceived their patients as friendly, interested, physically healthy, emotionally healthy or adhering to a treatment regimen. Doctors reported lower levels of satisfaction with the consultation when they perceived patients as assertive or worried or they themselves felt pressed.

Summary

The results suggest that doctors' satisfaction with the consultation is associated with their perception of the patient's affective state. It is not possible to comment on the accuracy of these perceptions as the studies did not compare doctors' perception of affective state with patients' actual affective state. One study that has compared the doctors' perception of the patient with the patients' own report casts doubt on the accuracy of their perception of the patient. The study, conducted in a genetic counselling context, reported that doctors' perception of patient concern was unrelated to patients' actual level of concern (Michie et al, 1997).

In the six studies 36 input variables, 13 contextual, seven demographic and 16 cognitive and affective variables were examined. Most variables have been examined only once. From the reported results it appears that cognitive and affective variables of the doctor are associated with doctor satisfaction with the consultation. However, insufficient studies have been conducted to determine with confidence the relationship between these variables and doctor satisfaction.

8.4 Process variables

Twenty-nine process variables have been examined for an association with doctor satisfaction (see Appendix eleven). Each study used a different methodology. Cartwright (1976) tape-recorded the consultation and interviewed both patients and doctors after the consultation. Weinberger and colleagues (1981) collected data by researchers sitting in on consultations, observing the interaction and completing an information sheet after each consultation. Sensky and colleagues (1989) asked patients and doctors to complete questionnaires immediately after the consultation. Winefield and Murrell (1991) audio taped consultations and coded the transcripts using Stiles' Verbal Response Mode system (1978)modified to make it more applicable to general practice consultations. The fifth study to examine process variables (Arborelius and Bremberg, 1992) video-recorded consultations and assessed them for completion of tasks which Pendleton and colleagues (1984) had identified as important.

Of the 28 variables examined once, 16 were associated with doctor satisfaction. One variable was examined in three studies.

Length of consultation. Two studies reported no association with doctor satisfaction (Weinberger, Greene & Mamlin, 1981, Suchman et al, 1993) and the third a negative association so that doctors were less satisfied with longer consultations (Cartwright, 1976). The one study to find an association between length of consultation and doctor satisfaction reported that 46% of general practitioners described their consultation as 'very satisfactory' if the consultation lasted less than 5 minutes. If the consultation took 5 minutes or longer, 23% of doctors regarded it as 'very satisfactory'. The other three process variables examined by Cartwright (1976) were also negatively associated with

doctor satisfaction. If the proportion of conversation time taken up by the patient was less than 60%, 40% of the general practitioners were very satisfied. If patients spoke for more than 60% of the conversation time, then 15% of doctors reported the consultation as 'very satisfactory'.

Cartwright also reported that the number of questions a patient asked influenced doctor satisfaction: the fewer questions asked, the more satisfied the doctors were. There was a sliding scale of satisfaction relating to the number of questions a patient asked during the consultation. If patients asked one question or less, 50% of doctors were very satisfied. If they asked two or three questions, 38% of doctors were very satisfied, and if patients asked four or more questions, then 24% of doctors described the consultation as very satisfactory.

The third variable, number of problems discussed, showed a similar pattern. The fewer the number of problems discussed, the more satisfied were the doctors. If fewer than four problems were discussed, 38% of doctors were very satisfied. If four or more problems were discussed the percentage of doctors very satisfied with the consultation dropped to 21%.

Weinberger, Greene and Mamlin (1981) reported that four of the ten process variables they examined were associated with doctors' satisfaction with a consultation. Doctors were more satisfied with consultations in which they provided some humour. Doctors were less satisfied when they took the initiative in the encounter (doctor activity in Appendix eleven).

With regard to the use of facilitation, the results were equivocal. Weinberger, Greene and Mamlin (1981) reported that doctors were more satisfied with consultations in which they used a lot of nonverbal facilitation, but they also reported a negative association between the number of absolute facilitative responses and doctors' satisfaction. The only variable related to the content of communication was examined by Sensky and colleagues (1989). They reported that doctors were less satisfied with consultations in which they had to give bad news to the patient. Giving patients good news was not associated with doctor satisfaction.

In Winefield and Murrell's first paper (1991), all five of the process variables examined were associated with doctors' satisfaction. Doctors were more satisfied with consultations in which their speech in the diagnostic stage contained a higher proportion of open questions and when they spent less time explaining what they were doing. In the prescriptive stage general practitioners were more satisfied under the following circumstances: their speech contained a lower proportion of open questions; they made a larger number of reflections on patient statements; they gave more instructions to the patient and more predictions about treatment. In the second paper by Winefield and Murrell (1992) they reported that the categories of doctors' and patients' speech they had developed were not associated with doctor satisfaction. On dividing each category into separate speech components less satisfying consultations included more phoning for results (one of the three components of diagnostic activity), more open questions by the doctor and less task-irrelevant chat (two of the seven components of emotional support), fewer medical labels (one of the seven components of informational support), more confirmations from patients (one of the seven components of patient relationship-

oriented).

Three of the five tasks identified by Pendleton and colleagues in 1984 as necessary for a satisfying and appropriate consultation were associated with what Swedish general practitioners and their patients rated as positive consultations (Arborelius and Bremberg, 1992). A consultation was rated as positive when a general practitioner defined the reason for the patient's attendance, achieved a shared understanding with the patient and involved the patient in the management of the problem.

Summary

Although many process variables have been examined for an association with doctor satisfaction only one, length of consultation, has been examined in more than one study. It is not possible to draw conclusions about the association of these variables with doctor satisfaction or their relative importance until there have been sufficient studies examining doctor-patient interaction using the same analyses and coding systems.

8.5 Discussion

Six studies have examined doctor satisfaction, together assessing 65 variables. Seven variables, age and gender of the patient, seniority of the doctor, patient satisfaction, doctors' perception of patient anxiety and depression, and length of the consultation have been examined in more than one study.

How doctors perceive themselves and their perception of patients seems to have a larger impact upon their satisfaction with a consultation than characteristics of the patient. For

example, while the age and gender of the patient does not influence doctors' satisfaction, doctors who report feeling pressed for time or who perceive their patients as emotionally distressed are less satisfied with their consultations. Doctors who perceive their patients will adhere to the treatment regimen or who perceive their patients as friendly or interested are more satisfied with the consultation. Support for these findings comes from studies that have examined stressors for doctors.

In examining causes of stress in doctors, Mawardi (1979) found that being on call was one of the three most prevalent sources of doctor dissatisfaction with work. When examining what it was that made a consultation frustrating for doctors Levinson and colleagues (1993) identified seven aspects from replies from over 1000 practising doctors. These included the doctor feeling distressed and the doctor perceiving the patient as not adhering to suggestions and treatment. In another study, it was reported that one of the most prevalent stressors for doctors was dealing with non-adherent and recalcitrant patients (Krakowski, 1982).

Consideration of some of the intervention studies that have been carried out may cast further light on factors influencing doctors' satisfaction with consultations. These are reviewed below.

Patient question asking. Thompson, Nanni and Schwankovsky (1990) investigated the effect upon doctor's satisfaction of encouraging patients to ask questions during a hospital consultation. Patients in the experimental group reported asking more questions (mean number of questions asked was 4.5) than those in the control group (mean number of

question asked was 3.5). There was no difference in the doctor's ratings of satisfaction between the two groups.

This result appears to be in contrast to Cartwright's finding that general practitioners were less satisfied with consultations in which patients asked more questions. There are several possible explanations for the difference. It may be that hospital doctors are as happy with patients who ask questions as those who do not; it may be that an obstetric and gynaecological clinic population asks more questions and the doctor's expectations of his or her patients have been revised to take account of this. The results may be explained by the 14 years that separate the studies, doctors in the 1990s being happier with patients who ask questions than were doctors in the 1960s. The difference could also be due to a difference in ethos prevailing in the two countries in which the studies were carried out.

Alternatively, while the difference between the two groups was significant, patients in both of Thompson's groups asked more questions than the doctors' in Cartwright's study preferred. It may be that after a certain number of questions are asked, any additional information seeking behaviour by the patient will not influence how the doctor feels about the consultation.

Patient anxiety. Thompson and colleagues also reported that experimental patients were less anxious than those in the control group. Sensky and colleagues examined patient anxiety and reported no association with doctor satisfaction. Perception of patient anxiety was examined in two studies (Sensky and colleagues ,1989 and Suchman and colleagues, 1993). Both studies reported that doctors were less satisfied when patients were

perceived as anxious. It may be that any dissatisfaction engendered by the experimental group asking more questions was counterbalanced by their lower anxiety. In a study of attitudes of US doctors to patient characteristics patients who were described as "tense, anxious" did not evoke either predominantly positive or negative responses (Harris, Rich & Crowson, 1985). This result may be due to the design of the study that gave doctors a description of a patient, which they did not see.

Patient activity. Another intervention study that may clarify the relationship between an independent variable and doctors' satisfaction with consultations is one conducted by Lewis, Pantell and Sharp (1991) which assessed doctor satisfaction with paediatric consultations following an intervention designed to improve communication during consultations. The details of the interventions are given in Chapter 12. The effect of the intervention was to encourage children to participate more in consultations, and doctors to address more recommendations to the child and child plus parent, as opposed to only the parent. The experimental group consultations were no longer than the consultations of the control group. Doctors in the experimental group did not differ in level of reported satisfaction from doctors in the control group. More active patients in this instance did not make doctors more or less satisfied. This result is in accordance with the work by Weinberger, Greene and Mamlin, although different methods were used to assess patient activity.

There are however some difficulties in drawing conclusions from the results of the reviewed studies. The methodological limitations fall into four categories: theoretical basis, study design, measures and data analysis.

Theoretical basis. As with patient satisfaction, theoretical models have not been used to guide research in this area. The literature on work and job satisfaction in general for doctors could have been used to guide the identification of variables to be examined.

Study design. The six studies reported here were of cross-sectional design and therefore do not allow any causal explanations to be suggested.

A second difficulty related to study design is the small number of doctors participating in some of the studies. Half of the studies had 12 or fewer doctors and this raises the possibility that the samples are not representative of doctors in general, and that the studies lacked sufficient power for the analyses undertaken.

Measures. Most of the measures used in the studies are not standardised and different measures of the same concept are used.

As noted, the data on the process variables were collected using different methodologies. The data in the study by Weinberger, Greene and Mamlin (1981) were collected by observation alone. As it was not possible to make notes during the consultation, an information sheet was completed by the observer subsequent to each consultation. The reliability of these data was not ascertained. This method of data collection implies that the level of humour in any consultation was a subjective judgement by one individual. Other data were gathered from both patients and doctors. Immediately after the consultation the observer asked the doctor for their assessment of it; the responses by the doctor may have been biased by the observer's view of the consultation. An independent

interviewer spoke with the patient.

The contextual variable, length of consultation, although examined three times, was assessed in two different ways: one study counted the total number of statements made and the other two timed the consultation.

Table 8.1 shows that at least three methods have been used to assess the outcome measure, doctor satisfaction with the consultation, although details of the measures are not always provided. Weinberger, Greene and Mamlin (1981) do not provide information either on the content of their satisfaction question or on the criterion used to divide respondents into the two groups: those expressing satisfaction with the consultation and those who expressed dissatisfaction.

Two of the six studies added extra dimensions to the equation of doctor satisfaction. Winefield and Murrell (1991) divided the consultation into two stages and the positive and negative associations they reported between the process variables and doctors' satisfaction referred only to one or other stage of the interview. Developing their measure of doctor satisfaction Suchman and colleagues (1993) reported that it contained four dimensions. The independent variables were then assessed for their association with any one of the four dimensions.

Data analysis. Most of the studies used correlational designs with univariate analyses which examine associations between the dependent and independent variables. A major problem therefore is the interpretation of the nature of any associations. Most studies

encourage the perception of the independent variables influencing the dependent variables, however the influence may be in the opposite direction or may reflect both being associated with a third, unknown, causal factor. For example, the reported association between use of humour and doctor satisfaction with the consultation, humour is associated with mood. It may be that doctors who are feeling satisfied with their consultation(s) are more relaxed and hence more likely to provide humour. Alternatively the use of humour may make you feel more satisfied; or humour may be related to being relaxed, that is not on call. Suchman and colleagues(1993) conducted regression analysis and this allows the identification of independent variables that may predict the dependent variables but it does not provide causal answers.

Another difficulty is apparent in Cartwright's (1976) reported findings. Longer consultations, patients asking more questions and discussing more than four problems are reported as being associated with doctor dissatisfaction with the consultation. This may be expected if one considers that these variables would clearly describe a clinically difficult consultation, or at least one that does not live up to the doctors' expectations. But doctors' expectations are not explicitly explored and the current analysis makes it impossible to tease out any interactions between these variables and the influence that may have on doctor satisfaction.

The same difficulty is apparent in other studies. Sensky and colleagues (1989) reported that doctors were less satisfied when they gave bad news to their patients and when they perceived their patients as more anxious. The study also tells us that doctors perceived patients who received bad news as being more anxious than those who did not. It is not

possible from the analyses presented to determine whether these two variables are interacting or which may have the more powerful influence on doctor satisfaction.

The reported association between the doctor being on call and lower levels of satisfaction is not as simple as it may first appear. Information is required on whether doctors who report being on call are also the ones who report feeling pressed and whether there is any relationship between the variables.

It may be that feeling satisfied causes the interaction process to change in some way. Alternatively a third variable, as yet unidentified, may be influencing both the independent and dependent variables.

The approach taken in these studies fails to view doctors as individuals: they assume that all doctors have the same requirements for the variable in question. They also assume a linear causal model, taking no account of interactions.

A separate difficulty with the data analysis is the unit of analysis that has been employed. Most studies have taken the unit of analysis as the consultation, not the individual doctor. As the doctors in each study saw a different number of patients the results of each study may be influenced by the views of the one participant who conducted the largest number of consultations. In addition, no study has attempted to distinguish between inter and intra doctor variation in satisfaction.

Putting these difficulties aside and considering the results as they stand it may be that

doctors are more satisfied with consultations in which their expectations are met. While this was not explored explicitly in any of the studies it can be argued that doctors expect to talk more than patients and thus expectations may mediate the observed negative association between time and satisfaction. Studies have shown that doctors underestimate the amount of time they talk in consultations and interrupt patients after about 18 seconds (Beckman and Frankel, 1984) thereby attempting to confine discussion to one problem and making them feel less satisfied if patients ask questions.

In Weinberger, Greene and Mamlin's (1981) sample the expectation that patients would adhere to recommended treatment increased doctor satisfaction, and the other variables concerned with doctors feeling pressed, being on call and providing humour, may interact. If doctors feel pressed and are on call then they may expect the consultation to be more difficult and perceive it in that way, which could lessen their satisfaction with it.

Winefield and Murrell's (1991) finding also adds weight to this hypothesis. Doctors may expect to ask more open questions and give a higher proportion of instructions connected with an examination to the patient while they are gathering information, compared to when they are giving information. It also seems appropriate for doctors to expect to make a number of predictions about medication in the prescriptive stage when they are involved in giving information.

The most satisfying consultations for general practitioners were those in which the consultations followed a fairly predictable path from the patient giving them information to resolving the problem in a way which met their expectations and therefore reassured

them about their competence. Winefield and Murrell (1991) take up the issue of anxiety in doctors suggesting that anxiety about not being able to help is the greatest source of dissatisfaction for doctors. This would parallel other findings concerning the stressfulness to doctors of medical uncertainty (Schwenk et al, 1989, Gerrity , DeVellis & Earp, 1990).

8.6 Conclusions

Doctor satisfaction with consultations has been far less frequently examined than patient satisfaction. The issues of how different types of interactions in different stages of a consultation and whether doctor satisfaction is multi-dimensional have only barely begun to be addressed. While the few studies that have been conducted are limited by several methodological problems, a pattern emerges suggesting that doctor satisfaction with a consultation is influenced by two sets of variables: those concerned with the process and content of the consultation, and those related to how the doctor perceives the patient.

Other conclusions to be drawn are very similar to those arrived at from the literature review on patient satisfaction with a specific consultation in Chapter 4. That is, that research on doctor satisfaction would be enhanced by the:

i) use of experimental studies that attempt to alter the amount of interaction that takes place in any consultation,

ii) use of multivariate analyses to determine which variables predict doctor satisfaction, and

iii) the inclusion of analyses that explore how variables interact to influence doctor satisfaction.

Two variables seem to be worth exploring further. Doctors expectations of the consultation need to be examined explicitly to assess the impact of such expectations being met or not upon their satisfaction with consultations. The second variable that may influence satisfaction is anxiety, in both doctors and patients. Thompson, Nanni and Schwankovsky (1990), Winefield and Murrell (1991) and Suchman and colleagues (1993) suggest that this variable may mediate satisfaction. Thompson, Nanni and Schwankovsky (1990) and Suchman and colleagues (1993) suggest that perception of patient anxiety is the important factor while Winefield and Murrell (1991) suggest that it is the doctor's own level of anxiety that may be the stronger influence on satisfaction.

Studies designed to begin an exploration of these issues are described in Chapters nine, ten and 13.

Chapter 9

Patient and doctor satisfaction: study in an antenatal clinic

9.1 Introduction

The aim of the study reported in this chapter is to predict patient and doctor satisfaction in antenatal clinics. The results will be compared with those of a similar study conducted in a dermatology clinic described in Chapter 10. Chapter 4 describes the variables that have been examined for their impact on patient satisfaction and concludes that due to the lack of replication there is little current consensus on what is important. The study described in this chapter examines three predictors of patient satisfaction, and two of doctor satisfaction, the variables were chosen from those used in previous research (see Chapters 4 and 8).

9.2 Hypotheses

Five hypotheses are examined in the study.

Hypothesis 1: Patients reporting higher levels of comprehension will report higher levels of satisfaction with the consultation than those reporting lower levels of comprehension.

Kincey, Bradshaw and Ley (1975) reported that patients' satisfaction with their medical consultations was associated with the amount of information received from the doctor and their understanding of the information given to them. This was further developed by Ley (1988) in his cognitive model of communication and compliance wherein satisfaction with communication and compliance with treatment regimens are accounted for by

comprehension and memory.

Hypothesis 2: Patients reporting lower levels of anxiety will report lower levels of satisfaction with the consultation than those reporting higher levels of anxiety.

Ley (1988) also reviewed studies of anxiety and recall of information and found that low anxiety is associated with poorer recall. Poorer recall is associated with lower satisfaction with the communicative aspect of the consultation.

Hypothesis 3: Patients who report that their expectations have been met are more satisfied with their consultations.

The influence of expectations on level of patient satisfaction has been demonstrated by Korsch, Gozzi and Francis (1968), Korsch and Negrette (1972) and Linder-Pelz (1982b). Although the data on expectations were collected retrospectively by Korsch and colleagues, interviews revealed that patients who expected the doctor to be communicative and friendly and perceived them to be so, were more satisfied than patients who reported that these expectations were not met. While expectations were associated with patient satisfaction in the study reported by Linder-Pelz (1982b), expectations accounted for a small amount of the variance in patient satisfaction (8%).

Hypothesis 4: Doctors are less satisfied with consultations in which patients intend to ask questions.

One way patients have of getting the information they require is to ask questions of their doctors. In a descriptive study of general practitioners Cartwright (1976) reported that the more questions patients asked, the less satisfied the doctors were with the

consultation. In an intervention study by Thompson, Nanni and Schwankovsky (1990) there was no difference in the doctor's rating of satisfaction between the experimental group and the control group although the experimental group reported asking more questions. Another intervention study that had doctor satisfaction as an outcome measure was conducted by Rost and colleagues (1991). In their study patients in the experimental group asked significantly more questions but this did not diminish doctor satisfaction with patient interactions. In the current study patient intention to ask questions was assessed.

Hypothesis 5: There is a positive association between patient and doctor satisfaction with the consultations.

Winefield and Murrell reported no association between patient and doctor satisfaction (1991), while Like and Zyzanski (1987) and Sensky and colleagues (1989) reported that increased doctor satisfaction with the encounter was associated with increased patient satisfaction (Chapter 8).

Two other variables were examined for an association with satisfaction although no hypotheses were made on the direction of the associations. The length of the consultation was examined as Cartwright (1976) reported a decrease in doctor satisfaction the longer the consultation lasted. Weinberger, Greene and Mamlin (1981) and Arborelius and Bremberg (1992) reported no association between length of consultation and doctor satisfaction.

The second contextual element to be studied was the type of room. This variable was included as consultations with women were held in a variety of rooms providing different

levels of sound proofing and therefore confidentiality.

9.3 Method

9.3.1 Design

Patients completed one questionnaire before their consultations with the doctor and a second questionnaire after their consultations. Doctors completed a short questionnaire at the end of the consultations. Contextual aspects of the consultations were recorded by an observer (JK).

9.3.2 Participants

Those eligible for participation were patients, fluent in English, attending the department of obstetrics for antenatal care at a London teaching hospital between October 1988 and February 1989. All doctors working in the antenatal clinic during the same period of time were eligible for the study.

9.3.3 Measures

The measures employed in the study are divided into three sections. Section 9.3.3.1 describes the measures completed by patients; section 9.3.3.2 describes measures completed by doctors; and, section 9.3.3.3 describes the additional measures taken. Table 9.1 gives details of the measures used in the study. The left-hand column details the variable that was measured or how the question was phrased, the next column indicates the type of rating scale used, and the third column indicates whether the question was asked before (pre), or after (post) the consultation.

9.3.3.1 Measures completed by patients

a) Intention to ask questions.

b) Anxiety after the consultation.

c) Reported comprehension.

d) Fulfilment of expectations.

e) Satisfaction with the consultation.

f) Demographic data.

9.3.3.2 Measures completed by doctors

a) Perception of patient anxiety.

b) Perception of patient comprehension.

c) Satisfaction with the consultation.

d) Demographic data.

9.3.3.3 Additional measures

a) Length of consultation.

b) Type of room in which the consultation was conducted.

9.3.4 Procedure

Ethical committee approval was sought and obtained from the hospital ethics committee.

The doctors in the antenatal clinic gave their permission to complete questionnaires for every consultation that was conducted with a patient who had agreed to participate in the study.

Table 9.1 Measures in the study

Measures completed by patients	**Rating Scale**	**Time Measured[1]**
a) "Have you any questions that you intend to ask during the consultation?"	Yes/No	Pre
b) "How anxious do you feel right now?"	8-point scale[2]	Post
c) "How much did you understand of what the doctor said to you?"	8-point scale[3]	Post
d) "Were your expectations met?"	Yes/No	Post
e) "Overall how satisfied are you with the visit to the doctor?"	8-point scale[4]	Post
f) Demographic data: Age	Years	Pre
Measures completed by doctors a) "How anxious does this patient seem to be?"	8-point scale[2]	Post
b) "How much did this patient understand of what you told her?"	8-point scale[3]	Post
c) "Overall, how satisfied were you with this consultation?"	8-point scale[4]	Post
d) Demographic data: Level of seniority Gender	4 categories[5] Male/ Female	Post Post
Additional measures a) Length of consultation	Minutes	During
b) Type of room	3 categories[6]	Post
Coding frame: [1] = This refers to when the measure was assessed before (pre), after (post), or during the consultation. [2] = 0= Not at all anxious to 7 = Extremely anxious [3] = 0 = Nothing at all to 7 = Everything [4] = 0 = Not at all to 7 = Extremely [5] = Consultant, Senior Registrar, Registrar, Senior House Officer [6] = Room with door, room with curtain, room with both door and curtain		

Patients were approached and asked to participate in the study after they had booked in to the antenatal clinic and before they were seen by the doctor. When approached they were told the following: "We are currently conducting research into patients' experience of seeing the doctor in this clinic and we are asking women to complete a questionnaire for us on this subject. Would you be interested in taking part?". It was then explained to patients that they would be required to complete two questionnaires, one before their consultation and one immediately after their consultation with the doctor.

Doctors completed a short questionnaire at the end of each consultation. While the consultation was in progress the observer noted what type of room the consultation was conducted in and timed the duration of the consultation.

9.4 Analysis

Bivariate statistics were used to examine associations between independent and dependent variables for the data from patients. Bivariate associations were assessed principally by Pearson product-moment correlation coefficients for the variables with ordinal and interval measurement, and t-tests and one-way analyses of variance for comparing groups on variables with interval measurements. The variables found to be significantly associated with satisfaction were then entered into a forward entry multiple regression analysis.

Data from the doctors were non-independent as each doctor saw a number of patients. In addition some variables were missing for each doctor because a patient or the doctor had not completed every question on the questionnaire on every occasion.

To overcome these difficulties three types of analyses were conducted. To examine any association with between patient variables and doctor satisfaction each record was weighted by the number of doctors for whom there were data on the dependent variable (doctor satisfaction) divided by the number of patients for whom that variable had been estimated by the doctor. This weighting allows the appropriate adjustment to the degrees of freedom in the regression equation (the sum of residual and regression is the number of doctors minus one).

The second analysis was concerned with looking at differences between consultations within doctors. A correlation between the two measures is calculated separately for each doctor (and this is only possible if there are at least 2 measures for each doctor). The beta-coefficient from each valid analysis is then entered into a one-sample t-test to ask whether the mean of beta coefficients is significantly different from zero.

The third analysis asks whether doctors who report high levels on one variable also tend to report high levels on another variable. For this analysis we need to have pairs of values, with an average value for each variable, but this also has to be weighted because some doctors have seen more patients than others. A regression can then be carried out on these values.

9.5 Results

The results are divided into five sections. Section 9.5.1 gives the information on study participation and section 9.5.2 describes the main outcome data. Section 9.5.3 provides descriptive information on the independent variables. The results of the hypotheses testing

are in section 9.5.4 and additional results are in section 9.5.5.

9.5.1 Study participation

9.5.1.1 Patients

Forty-three of the 50 women approached agreed to participate in the study. Women were aged 19 to 41 years with a mean age of 33.5. The number of previous visits to the same clinic for the present pregnancy ranged from zero to eight with an average of 2.5 previous visits. Thirteen of the patients had seen, on a previous visit, the doctor they saw on the day that they took part in the study.

9.5.1.2 Doctors

Nineteen doctors participated in the study: ten women and nine men. Three of the men were consultants, two were senior registrars, three were registrars and one was a senior house officer. Of the ten female doctors one was a senior registrar, one was a registrar and eight were senior house officers.

The number of consultations conducted by each doctor ranged from one to five. Seven doctors saw one patient each, four doctors each saw two patients, five doctors saw three patients each, two doctors each saw four patients and one doctor saw five of the study participants.

9.5.2 Descriptive data: main outcome variables

9.5.2.1 Patient satisfaction

The mean level of patient satisfaction with the consultation was 5.9 (sd 1.2) with a range

from two to seven.

9.5.2.2 Doctor satisfaction

The mean level of doctors satisfaction with the consultation was 5.2 (sd 1.4) with a range from one to seven.

9.5.3 Descriptive data: independent variables

9.5.3.1 Intention to ask questions

Twenty-eight women reported an intention to ask questions in the consultation, and 13 reported that they did not intend to ask any questions. Two women did not answer this question.

9.5.3.2 Patient anxiety

After the consultation the mean level of anxiety was 2.2 (sd 2.1) with a range from zero to seven, where zero represents not at all anxious and seven, extremely anxious.

9.5.3.3 Patient reported comprehension

The mean level of reported comprehension after the consultation was 6.6 (sd 0.7) with a range from four to seven, where zero represents "nothing at all" and seven "everything".

9.5.3.4 Fulfilment of expectations

Thirty-four patients reported that their expectations had been met, four reported that they had not been met. Five women did not answer this question.

9.5.3.5 Doctors' perception of patient anxiety

Doctors perceived participants to have a mean level of anxiety of 3.1 (sd 1.8) with a range from zero, "not at all anxious" to seven, "extremely anxious".

9.5.3.6 Doctors' perception of patient comprehension

The mean level of comprehension patients were perceived to have by the doctors was 5.7 (sd 1.2) with a range from two to seven, where zero represents "nothing at all" and seven "everything".

9.5.3.7 Length of consultation

The mean length of the consultation was 14.9 minutes (sd 6.8) with a range from six to 35 minutes.

9.5.3.8 Type of room

Eleven consultations took place in a room with a door, 17 consultations took place in a room with a curtain over the entrance and nine consultations took place in a room with both a door and a curtain. This information was missing for six consultations.

9.5.4 Hypothesis testing

9.5.4.1 Hypothesis 1: Patients reporting higher levels of comprehension will report higher levels of satisfaction with the consultation than those reporting lower levels of comprehension.

This hypothesis was supported. Higher levels of reported comprehension were associated with higher levels of satisfaction with the consultation ($r = 0.27$, $p < 0.05$).

9.5.4.2 Hypothesis 2: Patients reporting lower levels of anxiety will report lower levels of satisfaction with the consultation than those reporting higher levels of anxiety.

This hypothesis was not supported. Lower levels of anxiety after the consultation were associated with higher levels of satisfaction with the consultation ($r = -0.36$, $p<0.01$).

9.5.4.3 Hypothesis 3: Patients who report that their expectations have been met are more satisfied with their consultation.

This hypothesis was supported. Patients who reported that their expectations had been met were significantly more satisfied than those who reported that they had not been met ($t=3.11$ (df 3.3) $p<0.05$). The mean level of satisfaction for women with expectations met was 6.2 (sd 0.8). For women who reported that their expectations were not met, the mean level of satisfaction was 4.0 (sd 1.4).

9.5.4.4 Hypothesis 4: Doctors are less satisfied with consultations prior to which patients have expressed an intention to ask questions.

This hypothesis was not supported. There was no association between patient's intention to ask questions and doctor's satisfaction with the consultation (Table 9.2)

Table 9.2 Hypothesis 4: Association between doctor satisfaction and patients' intention to ask questions

Variable	Multiple R	R Square	B	F (df)
Intention to ask questions during the consultation	0.34	0.11	1.03	1.8 (1,14)

9.5.4.5 Hypothesis 5: There is a positive association between patient and doctor satisfaction for the consultations.

This hypothesis was not supported. There was no association between patient satisfaction and doctor satisfaction with the consultation (see Tables 9.3a and 9.3b)

Table 9.3a Hypothesis 5: Associations between patient and doctor satisfaction with the consultation (between consultations, within doctor)

Doctor id	β coefficient
5	0.07
11	-0.50
13	2.00
	t = 0.64 df = 2

Table 9.3b Hypothesis 5: Association between doctor satisfaction and patient satisfaction with the consultation - Do doctors who have higher levels of satisfaction with the consultation tend to have patients who report higher levels of satisfaction with the consultation

Variable	Multiple R	R Square	B	F (df)
Patient satisfaction	0.42	0.18	0.49	3.05 (1,14)

9.5.5 Additional results

9.5.5.1 Age

There was no association between patients' age and patient satisfaction with the consultation ($r = 0.04$, $p > 0.05$) or doctor satisfaction with the consultation (Tables 9.4a and 9.4b)

Table 9.4a Association between age of patient and doctor satisfaction with the consultation (between consultations within doctors)

Doctor id	B coefficient
4	0.22
5	0.07
6	0.01
11	-0.05
13	-1.71
	t= 0.65 df= 4

Table 9.4b Association between age of patient and doctor satisfaction with the consultation - Do doctors who tend to report higher levels of satisfaction tend to have patients who are older

Variable	Multiple R	R Square	B	F (df)
Patient age	0.06	0.00	0.01	0.05 (1,14)

9.5.5.2 Level of seniority

There was a trend for patients to report different levels of satisfaction with doctors of different levels of seniority ($F(3,37) = 2.4$, $p = 0.08$). Women who had consultations with consultants reported a mean level of satisfaction of 6.0 (sd 0.8), those seen by senior registrars reported a mean level of satisfaction of 4.6 (sd 1.9), women seen by registrars reported a mean level of 6.1 (sd 1.1) and women who had consultations with senior house officers reported a mean level of satisfaction with the consultation of 6.1 (sd 1.0).

Doctor satisfaction with the consultation was not associated with their seniority (Table 9. 5).

Table 9.5 Association between doctor satisfaction with the consultation and level of seniority (between doctors analysis)

Variable	Multiple R	R Square	B	F (df)
Seniority	0.31	0.10	-.87	0.77 (2,14)

9.5.5.3 Length of consultation

There was no association between the length of the consultation and patients' satisfaction with the consultation ($r = 0.17$, $p > 0.05$). Between consultations, within doctors there was no association between length of consultation and doctor satisfaction (Table 9.6a). Doctors who report higher levels of satisfaction with the consultation also tended to have longer consultations (Table 9.6b).

Table 9.6a Association between length of consultation and doctor satisfaction with the consultation (between consultations within doctors)

Doctor id	B coefficient
5	0.14
6	0.04
9	2.00
11	-0.03
13	0.46
17	-0.06
	t = 1.06 (df=5)

Table 9.6b Association between length of consultation and doctor satisfaction with the consultation - Do doctors who report higher levels of satisfaction with the consultation also tend to have longer consultations

Variable	Multiple R	R Square	B	F (df)
Length of consultation	0.47	0.22	0.07	4.28 (1,15)*
*p = 0.05				

9.5.5.4 Type of room

The type of room the consultation was conducted in, which varied in the amount of privacy each women received, was not associated with patient satisfaction with the consultation $F(2,33) = 0.96$ $p > 0.05$) or doctor satisfaction with the consultation (Table 9.7)

Table 9.7 Associations between doctor satisfaction and type of room consultation conducted in

Variable	Multiple R	R Square	B	F (df)
Room	0.04	0.00	-0.07	0.02 (1,13)

9.5.5.5 Perception of patient comprehension

Between consultations within doctors, there was no association between perception of patient comprehension and doctor satisfaction (Table 9.8a). Doctors with higher levels of satisfaction also tended to report higher levels of comprehension in their patients (Table 9.8b).

Table 9.8a Associations between doctor satisfaction and perception of patient comprehension (between consultations within doctors)

Doctor id	β coefficient
4	1.0
5	0.50
6	-1.25
13	3.0
17	0.50
	t = 1.23 df=4

Table 9.8b Associations between doctor satisfaction and perception of patient comprehension - Do doctors who report higher levels of satisfaction with the consultation also tend to report higher levels of comprehension for their patients

Variable	Multiple R	R Square	B	F (df)
Perception of patient comprehension	0.61	0.37	0.58	8.77 (1,15)**
** $p < 0.01$	-			

Doctors' perception of patient comprehension was not associated with patients' reported comprehension (Tables 9.9a and 9.9b)

Table 9.9a Associations between doctor perception of patient comprehension and patient reported comprehension (between consultations within doctors)

Doctor id	β Coefficient
1	-0.5
5	2.0
6	-0.25
7	1.0
13	1.0
	t = 1.51 (df = 4)

Table 9.9b Associations between doctor perception of patient comprehension and patient reported comprehension. Do doctors who report higher levels of comprehension for their patients tend to have patients who report higher levels of comprehension

Variable	Multiple R	R Square	B	F (df)
Perception of patient comprehension	0.23	0.05	0.53	0.82 (1,14)

9.5.5.6 Perception of patient anxiety

Doctors' satisfaction with the consultation was not associated with their perception of patient anxiety (Tables 9.10a and 9.10b)

Table 9.10a Association between doctor satisfaction and perception of patient anxiety (between consultations within doctors)

Doctor id	β coefficient
4	-0.40
5	-0.50
6	-1.04
9	-2.0
11	-0.25
13	-1.50
17	-0.25
	t = 1.7 (df = 6)

Table 9.10b Association between doctor satisfaction and perception of patient anxiety - Do doctors who report higher levels of satisfaction tend to perceive their patients to have higher levels of anxiety

Variable	Multiple R	R Square	B	F (df)
Perception of patient anxiety	0.35	0.12	-0.24	1.97 (1,14)

9.5.5.7 Gender of doctor and doctor and patient satisfaction.

There was no association between the doctor's gender and either patient satisfaction (t=0.01, df= 39) or doctor satisfaction (see Table 9.11).

Table 9.11 Association between doctor gender and satisfaction with the consultation

Variable	Multiple R	R Square	B	F (df)
Gender of doctor	0.31	0.09	-0.87	0.77 (2,14)

9.5.5.8 Fulfilment of patient expectations and doctor satisfaction

There was no association between fulfilment of patient expectations and doctor satisfaction with the consultation (Table 9.12).

Table 9.12. Association between fulfilment of patient expectations and doctor satisfaction with the consultation

Variable	Multiple R	R Square	B	F (df)
Fulfilment of patient expectations	0.30	0.09	0.79	0.30 (3,9)

9.6 Multivariate analyses

9.6.1 Patient satisfaction

It was anticipated that forward entry multiple regression would be conducted on the variables found to be significantly associated with patient satisfaction. The three variables significantly associated with patient satisfaction with the consultation (anxiety, expectations being met and comprehension) were measured at the same time as satisfaction with the consultation and therefore cannot be considered as possible predictors of patient satisfaction, simply as correlates of patient satisfaction.

9.6.2 Doctor satisfaction

Due to the non-independence of the data it was not possible to carry out any multivariate analyses on the outcome variable doctor satisfaction.

9.7 Discussion

The results of this study suggest that when process variables, which are variables concerned with the interaction and content of the communication between patient and doctor, as described in Chapter 4, are omitted from the equation, cognitive variables exert a stronger influence than contextual or demographic variables on both patient and doctor satisfaction with consultations in an antenatal clinic. In the current study it is not possible to determine whether demographic and contextual variables influence cognitive variables and, whether there is an interaction effect between these different types of variables.

9.7.1 Patient satisfaction

Patients reported high levels of satisfaction with their antenatal clinic visits immediately after their appointments. This finding is in common with previous research and there are several possible explanations for it, as detailed in Chapter 6.

The current study supports the hypothesis that higher patient satisfaction is associated with expectations being met. This suggests that beliefs about what will happen during a consultation formulated prior to the appointment play a significant role in determining the subsequent evaluation of the consultation, as postulated in the doctor-patient model of satisfaction (Koehler, Fottler & Swan, 1992) and in the model put forward by Strasser and colleagues (1993). Indeed, Noyes and colleagues (1974) used expectation fulfilment as a measure of patient satisfaction. However the current study is not a strong test of this association as it only assessed whether expectations were met after the consultation, which may reflect hindsight biases. A more powerful exploration of this variable requires a prospective study in which expectations are measured prior to the consultation and

whether they are met or not is assessed after the consultation.

The negative association between anxiety and patient satisfaction was not expected. The finding replicates that of Thompson, Nanni and Schwankovsky (1990) who reported that satisfaction was impaired by high anxiety in outpatient visits. These results are to be treated with caution as both patient anxiety and satisfaction were measured at the same time and it is not possible to ascertain the independent effects of the variables.

Three earlier studies which looked for associations between patient and doctor satisfaction reported different results (Like and Zyzanski, 1987, Sensky et al, 1989, Winefield and Murrell, 1991). The finding reported here concurs with that of Winefield and Murrell (1991), that patient and doctor satisfaction are not related. Four studies have now examined the association between patient and doctor satisfaction with consultations, with contradictory results. Research assessing satisfaction with the consultation with the same measure in a number of contexts would contribute to the generalisability of these findings.

9.7.2 Doctor satisfaction

Ten variables, one contextual, three demographic, one process and five cognitive (two related to the doctor and three to the patient) were examined. The process variable and one cognitive variable was associated with doctor satisfaction: length of the consultation and perceived level of patient comprehension.

Doctors were more satisfied when the consultations were longer. This result was not expected and is contrary to the results of earlier research where two studies (Weinberger,

Greene & Mamlin, 1981 and Arborelius and Bremberg, 1992) reported no association between length of consultation and doctor satisfaction and one study (Cartwright, 1976) reported a decrease in doctor satisfaction the longer the consultation lasted. Doctors may be more satisfied with longer consultations as they may have talked more during the consultation, alternatively the patients may have talked more, or there may have been more silence in the longer consultations.

The association between perceived patient comprehension and doctor satisfaction may be associated with cognitive dissonance. One of the functions of a medical interview is to inform and educate patients. If doctors perceive that patients have not understood then they may think they are failing in that function. Alternatively a halo effect may be operating with satisfied doctors perceiving patients to be nice and therefore understanding what has been said.

There was no association between doctors perception of patient comprehension and patient reported comprehension. It could be postulated that there is an association between perception of patient comprehension and patient question asking. The current study found no association between patients' intention to ask questions and doctors' perception of patient comprehension. This result may reflect the subjective measure of assessing question asking. Patients were asked if they intended to ask questions, no objective measure of number of questions asked was taken. The patients who indicated an intention to ask questions may not have translated this intention into behaviour due to barriers to question asking becoming salient during the consultation: patients may have forgotten the question(s), the doctor may have spontaneously given the information the

patient wanted, the patient may have felt embarrassed when it came to asking the question during the consultation. What the study cannot tell us is whether patients who are perceived to have higher levels of comprehension actually ask more or less questions in their consultations than patients who are perceived to have lower levels of comprehension. Doctors may think patients who ask questions understand less of what is said, alternatively asking questions may be perceived as an indication of increased comprehension. This scenario may be further complicated by the type of questions that patients ask, that is whether the questions are initiated by the patient or whether they are bids for clarification related to what has been said by the doctor.

If intention to ask questions did not translate into question-asking behaviour in the consultation this may explain the lack of effect of this variable on doctor satisfaction with the consultation.

In a similar result to that related to comprehension, there was no association between patient reported anxiety and doctors perception of patient anxiety. It is not known what cues doctors use to assess patient anxiety. It is possible that doctors base their assessment on a number of factors such as speed of speech, number of questions asked, amount of eye contact during the consultation. The salient factors have yet to be identified.

A prospective study with tape-recorded consultations would allow for an examination of these issues. Chapters 13 and 14 describe such a study. The next Chapter, 10, describes a similar study to that described here conducted with a different outpatient population,

while Chapter 11 contains a more detailed discussion of the results of both descriptive studies.

Chapter 10

Patient and doctor satisfaction: study in a dermatology clinic

10.1 Introduction

The aim of this study is to examine in a different context (a dermatology outpatient clinic) and in greater depth some of the variables found to be associated with patient and doctor satisfaction in the previous study described in Chapter 9.

10.2 Hypotheses

Five hypotheses are examined in this study, one of which, number two is retained from the previous study.

Hypothesis 1: Patients who report positive disconfirmation of expectations will be more satisfied than those who report zero disconfirmation, and more satisfied than patients who report negative disconfirmation of expectations.

The previous study found that when patients' expectations were met patients were more satisfied with their consultations. This study explores the expectations about the consultation in greater depth. Expectations create a frame of reference within which to make comparative judgements. Reported satisfaction may follow from the emotion surrounding confirmed or disconfirmed expectations. Oliver's Theory of Disconfirmation (1980, 1981)1 identifies three types of disconfirmation, with decreasing levels of satisfaction: positive disconfirmation, when a patient perceives that something more or better occurred during the consultation than she or he expected; zero disconfirmation,

when a consultation goes exactly as the patient expected; and negative disconfirmation, when a patient expects an event to occur during a consultation and it does not.

Patients' expectations are likely to be influenced by knowledge and by prior experience of consultations, of doctors, and of the clinic and the hospital. Patients who have visited the same clinic or doctor before may have different expectations from patients making their first visit, their adapted standard being lower or higher depending upon their previous experience in the clinic. Expectations are likely to be influenced also by the content of prior communication from health professionals and peers and the individual characteristics of the patient. In an effort to control for some of the differences in expectations, only patients making their first visit to the clinic were invited to participate in the study.

Hypothesis 2: Patients reporting higher levels of comprehension will report higher levels of satisfaction with the consultation than those reporting lower levels of comprehension.

This hypothesis was retained to compare the results across outpatient clinics.

Hypothesis 3: Both patients and doctors will be more satisfied with consultations when their perceptions of the condition concur.

A concept that had not been examined in the previous study but which has been suggested as important in influencing patient satisfaction is that of perceptual congruence (Starfield et al, 1979, Starfield et al, 1981). It is hypothesised that if patients and doctors perceive the condition in the same way they may both be more satisfied with the consultation. For example, Starfield and colleagues 1979,1981 working in ambulatory care found that when

doctors and patients agreed about the existence of problems, patients had greater expectations of improvement, and better outcomes were perceived by both the patients and doctors than when they disagreed. In a dental setting Zimmerman (1988) described similar findings reporting that the extent of the differences, not the direction of the differences was the important factor.

Hypothesis 4: Doctors will be more satisfied with consultations that meet their own expectations.

This hypothesis is included following the result in the earlier study where patients expectations being met predicted increased patient satisfaction with the consultation. It is hypothesised that doctors may also be more satisfied with consultations in which their own expectations are met.

Hypothesis 5: Doctors will be more satisfied with consultations in which they perceive patients to have higher levels of comprehension.

This variable was included as there was an association between doctor satisfaction and perception of patient comprehension in the earlier study.

10.3 Method

10.3.1 Design

Patients completed one questionnaire before their consultations with the doctor and a second questionnaire after the consultations. The doctor completed two questionnaires for each patient. One questionnaire was completed after the doctor had read the patient's notes, prior to the patient entering the consultation room. The second questionnaire was

completed by the doctor immediately after the patient left the consultation room.

10.3.2 Participants

Those eligible for participation were patients, fluent in English, attending the dermatology outpatient clinic at a London teaching hospital for the first time between January and February 1990.

The doctor was a male consultant dermatologist in his early forties.

10.3.3 Measures

The data in this study were self-report data collected from patients and doctors.

10.3.3.1 Measures completed by patients

a) Satisfaction with the consultation

b) Fulfilment of expectations

c) Comprehension

d) Perception of condition

Seriousness of condition

Discomfort caused by condition at home and at work

Length of time patient will have condition

e) Anxiety

f) Demographic data

10.3.3.2 Measures completed by the doctor

a) Satisfaction with consultation

b) Fulfilment of expectations

c) Perceived ease of consultation

d) Perceived comprehension of patient

e) Perception of patients' condition

Seriousness of condition

Discomfort caused by condition at home and at work

Whether condition chronic or acute

Table 10.1 gives details of the measures used in the study. The left-hand column details the variable measured or how the question was phrased, the next column indicates the type of rating scale used, and the third column indicates whether the question was asked before (pre) or after (post) the consultation.

Some of the independent variables require a more detailed explanation and these are given below.

10.3.3.3 Expectations

Three variables were used to investigate Oliver's Theory of Disconfirmation: general expectations, expectations about having a history taken and expectations about treatment. For expectations about history-taking participants were asked, prior to the consultation, if they expected to have a history taken. Response options were 'yes' and 'no. After the consultation participants were asked if they had had a history taken , answering 'yes' or no. The participants who reported 'yes' or 'no' on both occasions were considered to

Table 10.1 Description of measures used

Measures completed by patients	**Rating Scale**	**Time Measured[1]**
a) "Overall how satisfied are you with the visit to the doctor?"	8-point[2]	Post
b) "Would you say that your expectations were met?"	Yes/No	Post
c) "How anxious do you feel right now?"	8-point[3]	Pre and Post
d) "How much did you understand of what the doctor said to you?"	8-point[4]	Post
e) Perception of condition: "How serious do you think you condition is" "How much discomfort/disruption does it cause you at home?" "How much discomfort/disruption does it case you at work?" "How long will you have this condition?"	 8-point[5] 8-point[6] 8-point[6] 4-point[7]	 Pre and Post Pre Pre Pre
f) Demographic data: Age Gender	Years Male/Female	Pre Pre
Measures completed by doctor		
a) "Overall how satisfied were you with this consultation	8-point[2]	Post
b) "Did this consultation meet your expectations?"	Yes/No	Post
c) "How easy do you think this consultation will be?"	8-point[8]	Pre and Post
d) "How much do you think this patient understood?"	8-point[4]	Post
e) Perception of patients' condition: "How serious do you think the condition is?" "How much discomfort/disruption does it case the patient at home?" "How much discomfort/disruption does it cause the patient at work?" "Would you describe the condition as..."	 8-point[5] 8-point[6] 8-point[6] Chronic/ Acute	 Pre and Post Post Post Post
Coding frame [1] = This refers to whether the variable was assessed before (pre) or after (post) the consultation. [2] = 0 = Not at all satisfied to 7 = Extremely satisfied [3] = 0 = Not at all to 7 = Extremely [4] = 0 = Nothing at all to 7 = Everything [5] = 0 = Not at all serious to 7 = Extremely serious [6] = 0 = None at all to 7 = lot [7] = 0 = Long lasting, 1 = It will come and go every so often, 3 = It won't last long, 3 = Don't know [8] = 0 = Not at all easy to 7 = Extremely easy		

have received zero disconfirmation for this variable. Participants who before the consultation said they expected a history to be taken and reported that a history had not been taken were categorised as receiving negative disconfirmation. Participants who before the consultation said they did not expect a history to be taken and reported that a history had been taken were considered to have received positive disconfirmation. For the treatment variable, participants were divided into groups receiving negative, zero and positive disconfirmation using the same method as for the history-taking variable.

For general expectations, patients were asked after the consultation, whether their expectations had been met. If patients indicated that their expectations had not been met they were asked if the consultation was better or worse than expected. Patients who said their expectations had been met were judged to have received zero disconfirmation. Those who said the consultation was worse than expected were categorised as receiving negative disconfirmation. Those who described the consultation as better than expected were judged as receiving positive disconfirmation.

10.3.3.4 Perceptual congruence

Perceptual congruence was based upon doctor and patients scores on five variables: seriousness of the condition assessed before the consultation (1); and after the consultation (2); how much disruption or discomfort the condition caused at home (3); and at work (4); and perceived chronicity of the condition (5).

Patients responded to the question "How serious do you think your condition is?" on a scale of 0 - not at all serious to 7 - extremely serious, both before and after the

consultation. The question to the doctor, both before and after the consultation, was "How serious do you consider the condition to be?" The response scale was identical to that for patients.

With regard to disruption and discomfort patients responded to the questions "How much disruption/discomfort does your condition cause you at home?" and "How much disruption/discomfort does your condition cause you at work?" The eight-point response scale ran from 0 - none at all to 7 - a lot. The doctor responded on an identical response scale to a very similar question for both situations "How much disruption/discomfort do you think this condition causes the patient at home?" and "How much disruption/ discomfort do you think this condition causes the patient at work?"

Agreement is defined by a very tight range of scores. If both patient and doctor indicated the same score for any question they were said to agree. All other combinations of scores were coded as disagreement.

With regard to perceived chronicity of the condition patients were asked "How would you describe your condition with regard to how long you will have it?" The response categories were: Long lasting; It will come and go every so often; It won't last long; Don't know. The doctor was asked "Would you describe this condition as" with two response categories: 'chronic' and 'acute'. This variable was recoded as agree if patients described the condition as 'long lasting' or 'it will come and go every so often' and the doctor described it as chronic or if patients described it as 'it won't last long' and the doctor described it as 'acute'. The other combinations of doctor and patient responses

were coded as disagree. If the patient said 'don't know' this variable was excluded from the analysis.

10.3.4 Procedure

The consultant dermatologist was approached and his participation in the study was sought. Ethical committee approval was sought and granted.

Patients were approached and asked to participate in the study after they had booked in for their outpatient appointment in the dermatology clinic. They were informed that a study was being carried out looking at what patients thought of their first consultation in the dermatology clinic. They were also informed that the doctor they were going to see was happy for them to participate in the study. If patients agreed to take part they were given the first questionnaire to complete. After the consultation with the doctor they were given the second questionnaire to complete. The pre-consultation questionnaire to be completed by the doctor was attached to the notes of all the patients making their first visit to his clinic. As the patient left the consultation room the doctor was handed the second questionnaire to complete.

10.4 Analysis

Bivariate statistics were used to examine associations between the independent and dependent variables. The variables found to be significantly associated with satisfaction were then entered into a forward entry multiple regression analysis. Bivariate associations were assessed principally by Pearson product-moment correlation coefficients for the variables with ordinal and interval measurements, and by t-tests and one-way analyses of

variance for comparing groups on variables with interval measurements.

10.5 Results

The results of the study are divided into five sections. Section 10.5.1 gives details about study participation and section 10.5.2 describes the results on the main outcome variables. Section 10.5.3 describes the distribution of responses on the independent variables and Section 10.5.4 presents the results from testing the hypotheses. Section 10.5.5 presents some additional results.

10.5.1 Study participation

Fifty-five of the 59 patients approached agreed to participate in the study. Seven patients did not complete the second questionnaire as they did not have enough time at the end of their consultations, five patients were not making their first visit to the clinic and four patients were re-allocated to be seen by a doctor not participating in the study. Data were therefore obtained on 39 patients. Twenty-five patients were female and 14 male. The mean age of participants was 46 with a range of 15 to 87 years. There was no significant difference in age between female and male participants.

10.5.2 Descriptive data: main outcome variables

10.5.2.1 Patient satisfaction

The mean level of patient satisfaction with the consultation was 6.1 (sd 1.7) with a range from zero to seven, where zero represents not at all satisfied and seven represents extremely satisfied.

10.5.2.2 Doctor satisfaction

The mean level of the doctor's satisfaction with the consultations was 6.2 (sd 1.4) with a range from two to seven.

10.5.3 Descriptive data: independent variables

10.5.3.1 Patient reported comprehension

The mean level of reported comprehension for patients was 6.5 (sd 1.1) with a range from one to seven, where zero represents nothing and seven represents everything.

10.5.3.2 Fulfilment of expectations: patient

Table 10.2 describes the number of patients at each level of disconfirmation for each of the expectation variables.

Table 10.2 Disconfirmation of patient expectations

Expectation variable	Positive disconfirmation n	Zero disconfirmation n	Negative disconfirmation n
History taking	1	22	5
Receiving Treatment	5	20	7
General expectations	6	25	5

10.5.3.3 Perception of condition

Table 10.3 describes how the patients and the doctor perceived the condition with regard to seriousness and discomfort caused.

Table 10.3 Perception of condition

Variable	Patient $\bar{x}$ (sd) (range)	Doctor $\bar{x}$ (sd) (range)
Perceived seriousness of condition prior to consultation.	2.1 (2.1) (0 - 7)	1.2 (1.8) (0 - 7)
Perceived seriousness of condition after the consultation.	1.9 (2.3) (0 - 7)	1.1 (1.7) (0 - 6)
Level of discomfort/disruption experienced at home.	2.0(2.3) (0 - 7)	1.8(2.5) (0 - 7)
Level of discomfort/disruption experience at work.	1.7 (2.0) (0 - 7)	1.4 (2.3) (0 - 7)

10.5.3.4 Perceptual congruence

Table 10.4 describes the level of congruence between patients and doctor on the five variables assessed perceptual congruency.

Table 10.4 Level of congruence

	Number of occasions of:	
Variable	**Perceptual congruence**	**Perceptual discordance**
Seriousness of condition prior to consultation	3	29
Seriousness of condition after the consultation	12	19
Discomfort/disruption at home	9	24
Discomfort/disruption at work	7	17
Chronicity	21	12

10.5.3.5 Patient anxiety

The mean level of anxiety for participants prior to their consultations with the doctor was 1.7 (sd 2.1) with a range of zero to seven, where zero represents not at all anxious and seven extremely anxious. Immediately after their consultations the mean anxiety level was 1.5 (sd 2.3) with a range of zero to seven.

10.5.3.6 Doctor's perception of patient comprehension

The doctor's mean level of perception of patient comprehension was 6.5 (sd 1.0), with a range from four to seven.

10.5.3.7 Fulfilment of expectations: doctor

The doctor reported that his expectations had been met in 28 consultations and not met in five of the consultations. These data were missing for six of the consultations.

10.5.3.8 Doctor's perception of ease of consultation

Before the consultation the mean level of anticipated ease of consultation for the doctor was 6.0 (sd 1.7) with a range from two to seven. After the consultation the mean level of perceived ease of the consultation for the doctor was 6.5 (sd 1.2) with a range from two to seven.

10.5.4 Hypothesis Testing

Hypothesis 1: Patients who report positive disconfirmation of expectations will be more satisfied than those who report zero disconfirmation, and more satisfied than patients who report negative disconfirmation.

This hypothesis was supported for two of the three expectation variables. For general expectations, patients reporting that their expectations had been met or that the consultation was better than expected had a significantly higher satisfaction score than patients who reported that their expectations had not been met (see Table 10.5) ($F(2,33) = 32.8$; $p<0.01$). With regard to expectations about history taking, patients reporting zero disconfirmation on the history taking variable were significantly more satisfied than those reporting negative disconfirmation (see Table 10.5) ($F(2,25)=8.4$; $p<0.01$). No significant differences were found between the groups on the treatment variable.

Table 10.5 Expectation fulfilment and patient satisfaction with the consultation

Variable	Mean satisfaction score and (sd) of patients receiving: Positive disconfirmation	Zero disconfirmation	Negative disconfirmation
General expectations	7.0 (0.8) (n = 6)	6.5 (0.9) (n = 25)	2.6 (1.8) ** (n = 5)
History taking	7.0 (0.0) (n = 1)	6.4 (1.1) (n = 22)	3.4 (2.7) * (n = 5)
Treatment	6.3 (0.9) (n = 5)	6.1 (1.9) (n = 20)	6.0 (1.7) (n = 7)
* $p < 0.01$ ** $p < 0.001$			

Hypothesis 2: Patients reporting higher levels of comprehension will report higher levels of satisfaction with the consultation than those reporting lower levels of comprehension.

This hypothesis was not supported although there was a trend in the expected direction ($r= 0.24$, $p = 0.08$).

Hypothesis 3: Both patients and doctors will be more satisfied with consultations when their perceptions of the condition concur.

Four of the five measures of perceptual congruence were associated with patient satisfaction: seriousness judged before and after the consultation and amount of discomfort the condition caused at home and at work. For each variable, patients were more satisfied with their consultations when patient and doctor had the same perception of the condition (see Table 10.6)

Table 10.6 Satisfaction (mean(sd)) with the consultation and perceptual congruence

	Perceptual congruence Mean(sd) (n)	**Perceptual discordance Mean (sd) (n)**	**t**	**df**
Patient Satisfaction **Variable**				
Seriousness judged before the consultation.	7.0 (0) (2)	6.0 (1.8) (28)	2.84	27.0 **
Seriousness judged after the consultation.	6.8 (0.6) (12)	5.7 (2.1) (19)	2.15	22.0 *
Discomfort/disruption caused at home.	7.0 (0) (8)	5.9 (2.0) (23)	2.76	22.0 *
Discomfort/disruption caused at work.	7.0 (0) (5)	6.0 (1.7) (17)	2.49	16.0 *
Doctor satisfaction **Variable**				
Seriousness judged before the consultation	7.0 (0) (2)	6.3 (1.2) (28)	2.87	26.0 **
Seriousness judged after the consultation	6.7 (0.6) (12)	5.8 (1.6) (19)	2.18	24.9 *
* $p < 0.05$ ** $p < 0.01$				

For the doctor, two variables, perception of seriousness of the condition both before and after the consultation, were associated with satisfaction. When doctor and patient

perceived the condition in the same way, the doctor was more satisfied with the consultation (see Table 10.6)

Hypothesis 4: Doctors will be more satisfied with consultations that meet their own expectations.

This hypothesis was supported. When the doctor reported that his expectations had been met he was significantly more satisfied with the consultation ($\bar{x}$ = 6.7 (sd 0.6)) than when his expectations had not been met ($\bar{x}$ = 3.6, sd = 1.5, t=4.53, df=4.23 $p<0.01$).

Hypothesis 5: The doctor will be more satisfied with consultations in which he perceives patients to have higher levels of comprehension.

This hypothesis was supported. When the doctor perceived the patient to have understood more, he was more satisfied with the consultation ($r = 0.77$, $p < 0.001$).

10.5.5 Additional results

10.5.5.1 Gender

Male patients were significantly more satisfied with their consultations than female patients. Mean level of satisfaction for men was 6.8 (sd 0.6) and for women it was 5.8 (sd 2.0) (t=2.3, df=31.9, $p<0.05$). There was a trend for the doctor to be more satisfied with consultations which were held with men. Mean level of doctor satisfaction with male patients was 6.7 (sd 0.6) and with female patients the mean was 6.0 (sd 1.6) (t=1.9, df=30.3, $p = 0.07$)

10.5.5.2 Age

There was a positive association between patient age and satisfaction. Older patients were more satisfied with their consultations. ($r = 0.36$, $p < 0.05$). There was no association between age of patient and doctor satisfaction with the consultation ($r = 0.11$, $p > 0.05$).

10.5.5.3 Seriousness of condition

For patients, there was a significant correlation between their perceived seriousness of the condition and their level of satisfaction with the consultation. The more serious patients thought their condition was, the less satisfied they were ($r = -0.38$, $p < 0.05$).

Patient perception of seriousness of the condition was associated with doctors' satisfaction with the consultation when measured before ($r = -0.59$, $p < 0.001$) and after the consultation ($r = -0.55$, $p < 0.001$). On both occasions, the doctor was less satisfied when the patient perceived the condition as more serious.

The doctor's own perception of the seriousness of the condition was also associated with his satisfaction with the consultation. The doctor was more satisfied when he perceived the condition to be less serious ($r = -0.34$, $p < 0.05$).

10.5.5.4 Ease of consultation

Patients were more satisfied with their consultations when the doctor perceived the consultation to have been easier ($r = 0.52$, $p < 0.01$). There was a positive association between the doctor's expected and perceived ease of the consultation and his satisfaction with it: the doctor was more satisfied when he expected ($r = 0.64$, $p < 0.001$) and

perceived ($r = 0.82$, $p<0.001$) the consultation to have been easy.

10.5.5.5 Patient and doctor satisfaction

Patients' and doctors' satisfaction were significantly, positively associated ($r = 0.58$, $p<0.01$). Patients and doctor were more satisfied with the consultation when the other partner in the consultation was more satisfied.

10.5.5.6 Patient anxiety and doctor satisfaction

There was no association between level of patient anxiety assessed prior to the consultation and doctor satisfaction with the consultation ($r = -0.17$, $p > 0.05$). There was a significant negative association between patient anxiety after the consultation and doctor satisfaction with the consultation ($r = -0.56$, $p<0.01$). The doctor was more satisfied with consultations after which patients reported lower levels of anxiety.

10.5.5.7 Patient expectations and doctor satisfaction

The doctor was more satisfied with consultations that patients described as meeting their expectations ($F(2,28) = 3.5$; $p<0.05$).

10.6 Multivariate analyses

10.6.1 Patient satisfaction

Sixty percent of the variance in patient satisfaction was accounted for by two variables ($F(2,26) = 19.8$; $p<0.001$). Expectations being met accounted for 45% ($F(1,27) = 21.9$; $p<0.001$) of the variance, and doctor satisfaction accounted for a further 15% of the variance (see Table 10.7).

Table 10.7 Results of regression analysis on patient satisfaction

Variables in the equation	β Coefficient	S.E.	p	% variance
Expectations met	2.11	0.45	< 0.001	45
Doctor satisfaction	0.60	0.19	<0.01	15
Variables not in the equation			**β Coefficient**	
Age			0.22	
Gender			-0.10	
Patient perception of seriousness of condition prior to consultation			-0.11	
Doctor perception of patient comprehension			0.12	
Doctor perception of ease of consultation			0.06	

10.6.2 Doctor satisfaction

Eighty-nine percent of the variance in doctor satisfaction with the consultation was accounted for ($F(3,24) = 61.1$; $p<0.0001$). Doctor's expectations being met accounted for 63% of the variance ($F(1,26) = 44.8$; $p<0.0001$); how easy the doctor anticipated the consultation to be accounted for 21% of the variance ($F(2,25) = 70.8$; $p<0.0001$) and the level of patient satisfaction accounted for 4% of the variance ($F(3,24) = 66.1$ $p < 0.0001$) (see Table 10.8).

Table 10.8 Results of regression analysis on doctor satisfaction

Variables in equation	β Coefficient	S.E.	p	% variance
Doctor's expectations met	-3.01	0.45	< 0.001	63
Doctor's perception of ease of consultation	0.32	0.05	< 0.001	21
Patient satisfaction	0.17	0.05	< 0.01	4
Variables not in the equation			**β Coefficient**	
Perceived ease of consultation			0.14	
Perception of patient comprehension			0.17	
Perceived seriousness of condition after consultation			0.02	
Patient anxiety after consultation			-0.15	
Patient perceived seriousness of condition before consultation			0.14	
Patient perceived seriousness of condition after consultation			-0.13	
Patient expectations met			0.12	

10.7 Summary of main findings

10.7.1 Patient satisfaction

Variables significantly associated with patient satisfaction are shown in Table 10.9.

Patients were more satisfied under the following conditions:

- when they were older.
- when they were male.
- when they reported that their consultations were better than expected.
- when they perceived their condition to be less serious.
- when the doctor reported a high level of comprehension for the patient.
- when the doctor perceived the consultation to be easy.
- when the doctor was more satisfied with the consultation.

Four of the five variables examining perceptual congruency were associated with patient satisfaction: seriousness assessed before and after the consultation, and discomfort the condition caused both at home and at work. If the patient and doctor had congruent perceptions on these variables, patients were more satisfied with their consultations.

Just two variables predicted patient satisfaction using regression: expectations being met and doctor satisfaction with the consultation.

Table 10.9 Variables significantly associated with patient satisfaction with the consultation

Independent Variables	**Association with patient satisfaction**	**Percentage of variance accounted for in multiple regression**
Patient Variables		
Age	r = 0.36 *	-
Gender	t = 2.3 (df 31.9) *	-
Seriousness of condition assessed before consultation	r = -0.38 *	-
Expectations met	F(2,33) = 32.8 ***	45%
Doctor Variables		
Perception of patient comprehension	r = 0.55 **	-
Perceived ease of consultation	r = 0.52 **	-
Satisfaction	r = 0.58 **	15%
Congruency Variables		
Seriousness of condition before consultation	t = 2.8 (df 27) **	-
Seriousness of condition after consultation	t = 2.2 (df 22) *	-
Discomfort/disruption at home	t = 2.8 (df 22) *	-
Discomfort/disruption at work	t = 2.5 (df 15) *	-
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$		

10.7.2 Doctor satisfaction

The 12 variables significantly associated with the doctor's satisfaction with the consultation are shown in Table 10.10. The doctor reported greater satisfaction with consultations under the following conditions:

- when his patients were less anxious.
- when patients thought their condition was less serious both before and after the consultation.
- when patients expectations had been met.
- when patients were more satisfied with the consultation.
- when his expectations had been met.

- when he thought patients had a higher level of comprehension.
- when he expected the consultation to be easy.
- when he perceived the consultation was easy.
- when he perceived the condition to be less serious.

Two of the five variables examining perceptual congruency were associated with doctor satisfaction: seriousness assessed before and after the consultation.

Three of these 12 variables predicted doctor satisfaction with the consultation (Table 10.8), although most of the variance was accounted for by a single variable, the doctor's expectations being met.

Table 10.10 Variables significantly associated with doctor satisfaction with the consultation

Independent Variables	**Association with doctor satisfaction**	**Percentage of variance accounted for in multiple regression**
Patient Variables		
Anxiety after the consultation	r = -0.55 **	-
Seriousness of condition before consultation	r = -0.59 ***	-
Seriousness of condition after consultation	r = -0.54 ***	-
Expectations met	F(2,28) = 3.5 *	-
Satisfaction	r = 0.58 **	4%
Doctor Variables		
Perception of patient comprehension	r = 0.75 ***	-
Expectations met	t = 4.5 (df 4.2) **	63%
Expected ease of consultation	r = 0.64 ***	21%
Perceived ease of consultation	r =0.82 ***	-
Perceived seriousness of condition	r = -0.34 *	-
Congruency Variables		
Seriousness of condition before consultation	t = -2.9 (df 26) **	-
Seriousness of condition after consultation	t = 2.2 (df 24.9) *	-
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$		

10.8 Discussion

10.8.1 Patient satisfaction

The discussion is structured to consider the results of each of the hypotheses followed by the additional results.

As in the previous study, patient satisfaction with their consultations was high.

Hypothesis 1. The results provide additional support for the hypothesis that patient expectations are an important determinant of patient satisfaction with the consultation. Oliver's Theory of Disconfirmation that individuals who experience positive disconfirmation will be more satisfied than those who experience zero disconfirmation and they, in turn, will be more satisfied than individuals who experience negative disconfirmation of their expectations was supported by results from two of the three variables assessed: patients' general expectations and expectations that a history would be taken. The difficulty with the general expectations measure is that it was assessed retrospectively. There were no significant differences between the three groups for expectations about receiving treatment.

Oliver (1980, 1981) postulated that expectations have two components: a probability of occurrence which stretches on a continuum from 'certain not to occur' to 'certain to occur' and an evaluation of that occurrence such as desirable/undesirable, good/bad. The partial support for the concept of negative and positive disconfirmation may be due to the absence of a measure of value or importance of the expectation.

Having a history taken may be valued by patients as it may suggest to the patient that the doctor is interested in their views of their condition. Additionally, it may provide patients with an opportunity to tell their stories in their own way. It may also be viewed as a fairly innocuous procedure with few repercussions whether expected or not. Receiving treatment when it is not expected may not be valued. It may have very different implications to having a history taken when it is not expected and may be interpreted as indicating a more serious illness than the patient originally perceived, or the treatment may be time-consuming, or costly.

As was reported, patients who viewed their conditions as more serious were less satisfied with their consultations. The difference in the results for these three factors suggests that it is necessary to consider the importance or value that an individual places on any particular event occurring during a consultation, as suggested by Social Learning Theory (Rotter, 1954).

Hypothesis 2. This hypothesis was not supported. Patient satisfaction with the consultation was not associated with their level of comprehension. Patients were more satisfied with their consultations when the doctor perceived them to have higher levels of comprehension. This may reflect the value that the doctor placed on comprehension and the effort he may have made to ensure that his patients understood what was discussed. Thus, more effort by the doctor was associated with higher patient satisfaction and higher perceived levels of comprehension. Alternatively this result could reflect a halo effect where the doctor's perception of the patient understanding influences his attitude and behaviour towards the patient.

As in the earlier study, in the antenatal clinic, there was no association between patient reported comprehension and the doctor's perception of patient comprehension. There is a need to understand what cues doctors use to assess comprehension in patients and then to train them to use ones that are more valid.

Hypothesis 3. Four of the five variables assessing perceptual congruence were associated with patient satisfaction. These findings are consistent with other findings that agreement between a health professional and his or her patient on key aspects of care are associated with good patient outcomes (Rosengren, 1961, Starfield et al 1979, 1981, Zimmerman, 1988, Gillespie & Bradley, 1988).

A possible explanation for the positive association between perceptual congruency on aspects of a condition and satisfaction with the consultation is the communication that has taken place in the consultation. Perhaps congruency about a condition is achieved when there has been sensitive and effective communication between the patient and doctor. As agreement was not achieved for every consultation there is room to investigate what triggers such communication between patient and doctor.

10.8.1.1. Additional findings

Age and gender of patients were associated with satisfaction: older patients and men were more satisfied. As with previous research, age was positively associated with satisfaction. Although the men were not significantly older than the women in this study they did report higher levels of satisfaction than did women. One possible explanation is that the interaction between the male doctor and male patients was different from the interaction

between the same doctor with female patients. Some support for this theory was reported by Hall and colleagues (1994a) who examined satisfaction of male and female patients with four groups of doctors: younger female doctors, younger male doctors, older female doctors and older male doctors. They reported that male patients were more satisfied with consultations in which they were seen by older male doctors.

At odds with this, Carney and Mitchell (1986) reported that simulated patients tended to perceive female medical students as more satisfactory than male medical students and Delgado, Lopez-Fernandez and Dios (1993) reported that both male and female patients attended by female doctors were more satisfied than those attended by male doctors. Two other studies reported no association between doctors' gender and patient satisfaction (Murphy-Cullen and Larsen ,1984, Colliver et al ,1993).

In the current study patients were more satisfied with consultations that the doctor perceived as being easier. This may reflect Pendleton's (1979) finding that general practitioners felt that a consultation was problematic if they did not feel relaxed. If a consultation is perceived by the doctor as being easy, the doctor may feel more relaxed which may be communicated either verbally or nonverbally to the patient, resulting in patients and the doctor feeling more satisfied with the consultation. Alternatively another variable, as yet unidentified, may be influencing the doctor's perception of the consultation and patients' satisfaction. It may be that easy consultations are associated with less serious disease and this in turn is associated with satisfied patients.

10.8.2 Doctor satisfaction

The two hypotheses related to doctor satisfaction were supported by the results of the study.

Hypothesis 1. There was a positive relationship between the doctor's expectations being met and his level of satisfaction with the consultation. This variable accounted for a large amount of the total variance in doctor satisfaction. Although little previous work has examined the impact of doctor expectations upon satisfaction with the consultation the results of the study in the antenatal clinic reported in Chapter 9 suggested that this may be important. As patients come to consultations with expectations of what will occur, so too do doctors. The expectations of doctors may originate from their previous experience of the outpatient clinic, the condition with which the patient presents, information about the patient including social class, gender, and occupation and, perhaps their previous experience with the patient.

The second hypothesis postulated that when doctors and patients agreed on certain aspects of the condition the doctor would be more satisfied with the consultation. Support for this hypothesis was initially provided by two of the five variables. These variables however did not predict doctor satisfaction.

Two other variables contributed to the considerable amount of the variance in doctor satisfaction that was accounted for: ease of consultation and patient satisfaction. The doctor was more satisfied with the consultations that he anticipated would be easier. If this result is replicated, a model or framework of the components that encourage doctors

to anticipate an 'easy' consultation will be required. Several factors may combine to make a consultation 'easy'.

Doctor satisfaction was positively associated with patient satisfaction. Although only one doctor was involved in this study it does replicate the findings of Sensky and colleagues (1989). These results suggest that the interactive nature of the consultation should not be ignored and that, while it is possible to consider the patient or doctor in isolation, a more valid approach is to consider both individuals as proposed by the Doctor-Patient Satisfaction Model (Koehler, Fottler & Swan, 1992).

There was also a trend for the doctor to be more satisfied with consultations with male patients. One possible explanation for this is that it was mediated by anxiety given that women were more anxious than men prior to the consultation. On running a regression analysis it was found that satisfaction was associated with anxiety and that the relationship between satisfaction and gender was spurious.

10.9 Conclusion

As in the antenatal clinic, demographic variables, did not account for any of the variance in patient or doctor satisfaction with the consultation. The most powerful variables were cognitive.

For both the doctor and his patients the variable that best predicted satisfaction with the consultation was whether or not their expectations were met.

The interactive nature of a consultation has been emphasised by the finding that patient satisfaction is associated with doctor satisfaction and that the reverse is true. Studies that are designed to examine the processes in the consultation and how they are associated with patient and doctor behaviour are required.

Chapter 11 compares the results from the studies carried out in the antenatal and dermatology clinics as well as broadening the discussion to include the findings reported in Chapters 4 and 8.

Chapter 11

Patient and doctor satisfaction: similarities and differences

11.1 Introduction

This chapter compares the results of the studies reported in Chapters 9 and 10 with the reviews of variables associated with patient satisfaction (Chapter 4) and doctor satisfaction (Chapter 8). Section 11.2 examines the variables associated with patient satisfaction and section 11.3 the variables associated with doctor satisfaction. Section 11.4 provides some conclusions and the final section, 11.5, identifies variables to be examined in the next study.

11.2 Critique of current studies

Prior to discussing the variables associated with patient and doctor satisfaction several points related to the design of the current studies need to be addressed. The specific problems relate to the timing of the measures of anxiety and expectations, and the single-item satisfaction scale. Each of these points will now be examined.

11.2.1 Measure of anxiety

In both descriptive studies (Chapters nine and ten) patient anxiety was assessed after the consultation, at the same time as patient satisfaction with the consultation. Patient anxiety can therefore only be considered a correlate, and not a predictor, of satisfaction with the consultation.

11.2.2 Fulfilment of expectations

A similar problem is apparent in the method used to assess whether patients' expectations had been met. Measuring whether expectations were met only after the consultation, makes any response subject to hindsight biases. A more valid assessment of the association between fulfilment of expectations and patient satisfaction would be to conduct a prospective study in which expectations were clarified prior to the consultation and whether they were met or not assessed after the consultation. The second descriptive study, described in Chapter 10, did explore patient expectations in this way.

11.2.3 The single-item satisfaction scale

Chapter two describes several issues of importance for a reliable and valid measure of patient satisfaction. It states that a five-point response scale is the most appropriate to use. Chapter three identifies a question that accounted for 45% of the variance in general satisfaction of genetic counsellees with their outpatient appointment. In Chapter six, describing the development of a satisfaction scale these points are seemingly unheeded. The reason is that the work presented in the thesis was not carried out in the time sequence suggested by the chapters. The study on the development of the patient satisfaction scale, while based on the satisfaction scales identified in that Chapter, was conducted prior to both the detailed exploration of the issues described in Chapter two and the publication of the paper by Shiloh, Avdor and Goodman (1990).

11.3 Variables associated with patient satisfaction

Associations between six demographic, cognitive and process variables, examined in both earlier and current studies, and patient satisfaction are presented in Table 11.1.

Table 11.1 Variables associated with patient satisfaction

Variables	Number of studies demonstrating: Positive association	Negative association	No association
Demographic			
Patient age	5	0	5
Patient gender	4 (women more satisfied) 1 (men more satisfied)	0	3
Cognitive			
Fulfilment of patient expectations	4	0	0
Patient reported comprehension	1 + 1 trend	0	0
Doctor satisfaction with the consultation	3	0	2
Process			
Duration of consultation	3	0	5

11.3.1 Patient age and patient satisfaction

Ten studies have examined the association between age and patient satisfaction. Five report no association (study in antenatal clinic plus Stiles et al, 1979a, Fitzpatrick and Hopkins, 1981b, Buller and Buller, 1987, Anderson and Zimmerman, 1993) and five report a positive association between patient age and patient satisfaction (study in dermatology clinic plus Weinberger, Greene & Mamlin, 1981, Friis and Tilles, 1988, Bertakis, Roter & Putnam, 1991, Michie et al, 1996). The studies have been conducted with different patient populations, with different age ranges which may explain the results.

There are at least four possible explanations for the association between age and patient satisfaction. Older patients may be more satisfied than younger patients as they have had longer to become accustomed to what passes as 'normal practice' in consultations.

Consequently, their expectations of consultations may be lower, or different, and easier to meet than those of younger patients. A second explanation is that younger patients may have different attitudes to doctors, health and medicine. Younger patients may prefer a more patient-centred style of consultation while older patients preferred style of doctor-patient communication may be more in line with what doctors actually do. Greene and colleagues (1994) provide some support for this theory with their study of satisfaction in a group of patients aged 60 years or over. They reported that participants appeared to be satisfied with a communication style usually considered characteristic of the traditional model of the doctor-patient relationship.

Two alternative explanations for the association between patient age and satisfaction may be that older patients may be less ready to express negative views or that there are actual differences in the quality of the health care they receive (Thompson, 1984).

11.3.2 Patient gender and patient satisfaction

Results on patient gender and patient satisfaction are divided between those that report no relationship between patient satisfaction and gender (Stiles et al, 1979a, Fitzpatrick and Hopkins, 1981b, Weinberger, Greene & Mamlin, 1981) and those that report that female patients are more satisfied than male patients (Buller and Buller, 1987, Friis and Tilles, 1988, Bertakis, Roter & Putnam, 1991, Hall et al, 1994b). The result from the current study where men report higher levels of satisfaction than women may be the influence of the male doctor either adversely affecting the satisfaction of female patients or increasing the satisfaction of male patients. The data from the study conducted by Hall and colleagues (1994b) supports this view as they suggest that the effect of patient gender

needs to be understood within the context of the gender of the doctor. An alternative explanation is that this result is a function of the different anxiety levels reported by men and women in the clinic.

11.3.3 Fulfilment of patient expectations and patient satisfaction

Four studies show this association (the two current studies and Korsch and Negrette, 1972, Linder-Pelz, 1982b). Future research needs to consider both patient attitudes and values to different events in a consultation.

11.3.4 Patient reported comprehension and patient satisfaction

In both studies, patients reported high levels of comprehension. There was some evidence of a positive association between patient reported comprehension and satisfaction with the consultation. One explanation is that, as with Ley's work (1976b), the method used to assess comprehension was not valid. No objective measure of assessing what the patients had understood was employed in either study. This method of assessment probably underestimates failures to understand. A second explanation may lie in the high ratings the patients gave themselves on the comprehension variable, suggesting a possible ceiling effect. A further possible explanation is that the original hypothesis is not valid.

11.3.5 Doctor satisfaction with the consultation and patient satisfaction

Three studies report a positive association (study in dermatology clinic plus Greene et al, 1994, Sensky et al, 1989) and two studies no association between doctor and patient satisfaction with the consultation (study in antenatal clinic plus Winefield and Murrell, 1991). The mechanism through which doctor satisfaction may be associated with patient

satisfaction is unclear. One possibility is that the interaction between patient and doctor results in both parties perceiving they have achieved a shared understanding of the problem. Support for this hypothesis comes from the study in the dermatology clinic as when there was perceptual congruence both patients and doctor were more satisfied with the consultation. That patients and doctors agreed on the seriousness of the condition more frequently after the consultation than before it, also supports the hypothesis. Alternatively patients may receive verbal messages from doctors which they interpret as doctors being satisfied with the consultation. Another explanation is that patients pick up nonverbal cues communicated through facial and body expression and tone of voice which demonstrate how the doctor is feeling and these influence patients' own perception of the consultation (Milmoe et al, 1967).

11.3.6 Duration of consultation and patient satisfaction

Eight studies have examined this variable, five report no association with patient satisfaction (antenatal clinic study plus Korsch and Negrette, 1972, Buller and Buller, 1987, Anderson and Zimmerman, 1993, Butow et al, 1995) and three (Comstock et al, 1982, Greene et al, 1994, Kenny, 1995) a positive association between duration of consultation and patient satisfaction.

A possible explanation for these results is that it may not be the actual length of the consultation that is important but the perceived length: if patients feel they had enough time with the doctor they are more likely to be satisfied. However one study that examined this reported no association between perception of time spent with doctor and patient satisfaction (Weinberger, Greene & Mamlin, 1981). These two contradicting

results suggest that duration may be associated with another, as yet unknown variable, that influences satisfaction.

11.4 Doctor satisfaction

Table 11.2 describes the associations between five demographic, cognitive and process variables, examined over the earlier and current studies, and doctor satisfaction. As there is a maximum of four studies examining any one variable there are possibly too few to discern any strong patterns however the results will be discussed below.

11.4.1 Patient age and doctor satisfaction

The current studies, with participants from two different age ranges, provide support for two earlier studies (Winefield and Murrell, 1991, Suchman et al, 1993) that doctors satisfaction with their consultations is not associated with the age of their patients.

Table 11.2 Variables associated with doctor satisfaction

Variables	Number of studies demonstrating: Positive association	Negative association	No association
Demographic			
Patient age	0	0	4
Cognitive			
Patient satisfaction	2	0	2
Doctor perception of patient comprehension	2	0	0
Process			
Question asking	0	1	1
Duration of consultation	0	1	3

11.4.2 Patient satisfaction and doctor satisfaction

Four studies have examined this variable. Winefield and Murrell (1991) reported no association between patient and doctor satisfaction with the consultation. Sensky and colleagues (1989) reported a positive association between these two variables. The current studies provide results supporting both of these earlier findings. These results may be due to some aspect of the methodologies employed by the studies such as different patient populations, settings, and analyses.

11.4.3 Doctor perception of patient comprehension and doctor satisfaction

In the current studies doctors' perceptions of patient comprehension was positively associated with doctor satisfaction. In both studies the mean level of comprehension as judged by the doctors was high. The association between perception of comprehension and doctor satisfaction may be related to the belief that the more a patient understands the more likely it is that she or he will adhere to treatment regimens. Doctors do not routinely ask patients if they have understood so they must be basing their assessment on something else. One possibility is that they judge a patient's comprehension from the number of questions the patient asks. Doctors may assume that if patients understand what they are saying they are less likely to ask questions. Alternatively doctors may base their judgements of perceived comprehension on the social class or age of the patient. Some studies conducted in general practice suggest that doctors offer fewer relevant explanations to patients the doctor believes to be from lower social classes (Bain, 1976, Pendleton and Bochner, 1980).

11.4.4 Patient question asking and doctor satisfaction

Cartwright (1976) reported a negative association between doctor satisfaction and number of questions asked by patients in her study of general practitioners. The current study found no association between intention to ask questions and doctor satisfaction with the consultation. This may reflect the fact that intention to ask questions is not the same as actually asking questions in a consultation. Alternatively, it may be that attitudes to patients asking questions have changed over the last 20 years, or that the context of care, general practice compared to outpatient clinic, has an influence.

11.4.5 Duration of consultation

One of the four studies that have examined this variable reported a negative association between duration of consultation and doctor satisfaction (Cartwright, 1976), the three remaining studies report no association between these two variables (study in antenatal clinic, Weinberger, Greene & Mamlin, 1981, Suchman et al, 1993).

11.5 Conclusions

Very few studies have examined factors associated with patient and doctor satisfaction. Of the few studies there have been, variations in the design, methodology and procedure of the studies that have examined patient and doctor satisfaction with consultations make it difficult to generalise across studies. Most studies examine new variables without attempting to explore further the impact of variables already suggested as possible mediators of patient satisfaction.

The first conclusion is that studies need to be designed that build upon previous work so that results can be compared across studies investigating the same variables with different

patient populations in different settings.

The preliminary empirical evidence reported here concurs with previous descriptive work which examined simple associations between a large number of variables and patient and doctor satisfaction with consultations. These studies provide support for the view that, the variables that are most strongly associated with patient and doctor satisfaction with the consultation are those that have a psychological component to them related to what happens in the consultation.

11.6 The next study

This review, including the results from studies reported in Chapters 9 and 10 suggest three variables which require further exploration:

- patient expectations
- doctor perception of patient comprehension
- doctor satisfaction.

There is a need to determine the mechanisms through which these variables influence patient and doctor satisfaction.

With regard to expectations about individual elements of a consultation it is not enough to impose our own ideas of what is better or worse than expected. It is necessary to explore what value patients attribute to various dimensions of their health and to various dimensions of expectations. The results suggest that satisfaction will be increased for the

patient if expectations are made explicit during a consultation, either by encouraging the patient to tell the doctor what they are expecting of the consultation or by encouraging the doctor to ask the patient what s/he is expecting from the visit, and these expectations are discussed with a view to determining how important or valuable the patient perceives each expectation to be. By exploring and discussing patients' expectations of a consultation it may be possible to avoid negative disconfirmation and increase positive disconfirmation. There may also be a corresponding increase in doctor satisfaction with the consultation.

For perception of patient comprehension, the important question is what cues doctors use to assess how much patients understand and how these relate to actual comprehension.

More work is required on doctor satisfaction to extend the small amount of work in this area. Predictors of doctor satisfaction and the mechanism through which patient and doctor satisfaction are associated can be examined.

Chapter 13 describes a study designed to explore further the issues of what cues are used by doctors to assess comprehension and the impact on patient and doctor satisfaction in encouraging patients to make their expectations with regard to their need for information more explicit. The study will also explore the longer-term impact of patient and doctor satisfaction by examining any possible relationship between satisfaction and health status.

Chapter 12

Interventions to enhance patient satisfaction with medical consultations

12.1 Introduction

Chapters four, eight, nine, ten and eleven examined factors associated with patient and doctor satisfaction with medical consultations. This chapter reviews research that has attempted to enhance patient satisfaction with medical consultations using a variety of interventions. Three groups have been the target for empirical work in this area: medical students, doctors, and patients.

12.2.1 Medical Students: introduction

Training programmes on communication skills for medical students have been introduced in medical schools in the UK, USA and Australia. This is partly in response to:

- Growing recognition of the importance of doctor-patient communication in taking good histories (Simpson et al, 1991), patient adherence (Korsch and Negrette, 1972) patient satisfaction (Evans et al, 1991) and clinical outcomes (Stewart and Roter, 1989).
- Patient complaints about doctor-patient communication.
- Growing consumer-orientation within the provision of health care.
- The changing task of doctors.

Encompassed within the greater consumer orientation is the realisation that doctor's in

the private sector exhibit more relevant communication skills than those practising in the NHS. The shorter length of consultation is often cited as the reason for the poorer skills observed in the NHS (Audit Commission, 1993, Stewart, Brown & Weston, 1989).

The introduction of communication skills training is also a response to the changing task facing doctors. Doctors are now required to spend more time caring for chronically ill patients rather than curing acute illnesses. This role requires a more complex set of skills to enable doctors to elicit patients' ideas and beliefs about their illnesses and to negotiate with patients over important issues concerning the management of their illnesses. In addition there is a shift in societal values from medical paternalism to patient autonomy (Roter et al, 1997).

Communication skills training may also sensitize medical students to issues, beliefs and attitudes of patients of different social and cultural backgrounds by encouraging them to see each patient as an individual. In addition, communication skills teaching may prevent the decrease in ability to communicate that occurs during medical training (Sanson-Fisher and Poole, 1979, Maguire, 1984, Flaherty, 1985). Two examples of how communication skills may deteriorate over the years of medical training are provided by Diseker and Michielutte (1981) and Helfer (1970). Diseker and Michielutte assessed medical students' empathy at admission to medical school and again four years later. The authors define empathy as the ability to understand what another person is experiencing and to communicate that understanding to the person. Results indicated that empathy declined over this period, despite some training in communication skills. Helfer (1970) compared the interviewing skills of students just entering medical school with those of senior medical

students. Senior students were worse than the new students at eliciting patients' problems, obtained less information about patients' personal difficulties and often inhibited the patient's communication by use of medical jargon.

Research has been carried out with the aim of discovering whether it is possible to teach, or improve, the communication skills of medical students. While it is seldom made explicit, an aim of such training programmes is to improve patient satisfaction with consultations.

Communication skills training programmes are taught to pre-clinical students (Armstrong et al, 1979, Winefield, 1982, Knox and Bouchier, 1985) and clinical students (Cline and Garrard, 1973, Vaughn and Marks, 1976, Whitehouse, Morris & Marks, 1984, Burnett and Thompson, 1986, Evans et al, 1989, McManus et al, 1993). Such programmes use a wide range of teaching formats.

The aims of the training programmes vary enormously in the extent to which they encompass affective, behavioural and cognitive objectives (Bloom, 1956 and 1964, Simpson 1995). In the affective domain objectives emphasise attitudes, values and emotions; in the behavioural domain objectives focus on specific behaviours students should be able to recognise and use as a result of the training programme; objectives in the cognitive field are concerned with students gaining knowledge and information about the use and importance of possessing good communication skills.

Some training programmes concentrate primarily on one domain, while the most broadly

based training programmes focus on objectives from all three domains. Most communication skills training programmes for medical students concentrate on the behavioural skills domain. Evaluation either involves comparing students before and after training in communication skills has taken place (Sanson-Fisher and Poole, 1979) or a group of trained students are compared with a group of students who have not received any training (Evans et al, 1992, Marteau et al, 1991, Moore et al ,1994, Sanson-Fisher and Poole, 1979). Outcome variables for communication skills training programmes are as varied as the aims and objectives of the programmes themselves. Most communication skills training programmes for medical students evaluate success by measuring specific behaviours (Maguire, Clarke & Jolley, 1977, Maguire and Rutter, 1982, Alroy, Ber and Kramer, 1984, Knox and Bouchier, 1985, Preven et al, 1986, Maguire, Fairbairn & Fletcher, 1986, McAvoy, 1988, Menahem, 1988). Although an implicit aim of these programmes is to enhance patient satisfaction with medical consultations, few communication skills programmes attempt to assess the effect of the training programmes on the patients' view of the consultation (Marteau et al, 1991).

Described below are communication skills programmes for medical students that have assessed either the impact of the training programme on the affective appraisal of the medical interview by the patient, or on a particular skill or attitude shown to be associated with patient satisfaction, such as giving information or expressing empathy (see Table 12.1).

Table 12.1 Communication skills programmes for medical students with an outcome related to patient satisfaction

Key: NR = Not reported

	Maguire, Roe, Goldberg, Jones, Hyde and O'Dowd **UK** **1978**	**Sanson-Fisher and Poole** **Australia** **1979**	**Marteau, Humphrey Matoon, Kidd, Lloyd and Horder** **UK** **1991**
Participants - Year **Number**	Clinical students Experimental n = 36 Control n = 12	Second year students n = NR	First year clinical students Experimental n =28 Control n = 45
Length and Content of Intervention	1 ½ hours Handouts on content and techniques of interviewing. Feedback by tutors using television replays, audio replays or ratings of the students' practice interviews.	8 - 16 hours Small group workshops.	9 - 12 hours Small groups Discussion of trigger videos, roleplay with and without video feedback.
Method of assessment	Independent assessment of an interview with a patient. .	Interview with a patient.	Video-taped interview with a simulated patient, rated by both the patient and an independent rater.
Outcome	Experimental students gained higher scores on amount of information elicited and used more of the skills associated with patient satisfaction than control students. Follow up five years later identified that trained doctors were more warm, empathic, self assured and competent.	Experimental students expressed more empathy.	Simulated patients rated experimental students as more empathic.

Table 12.1 continued

	Evans, Stanley, Coman and Sinnott Australia 1991	Moore, Block, Briggs-Style and Mitchell USA 1994
Participants - Year **Number**	First year clinical students n = 55	First year students n = 62
Length and Content of Intervention	11 hours Lectures on communication theory and skills. Communication skills workshops.	Course integrated over four years Part of New Pathway Curriculum -with an emphasise on humanism.
Method of assessment	Independent assessment of a videotaped interview with a medical or surgical patient .	Interview with a simulated patient assessed by the simulated patient.
Outcome	Experimental students demonstrated more effective use of silence and increased ability to discuss psychosocial concerns.	Experimental students elicited higher patient satisfaction.

12.2.2 Medical students: intervention studies

One of the earliest studies to assess the impact of communication skills training using measures other than the frequency of use of particular skills was a study conducted by Sanson-Fisher and Poole (1979). They employed both a within and between subjects design to examine whether empathy could be taught to medical students. Participants were all second year medical students participating in a behavioural science course.

Students were asked to carry out a 15 minute interview and to empathise with the patient during it. Students completed an interview with a patient both before and after training. Interviews were audio-tape recorded. Comparison was also made with a control group of students who did not receive any training.

Training comprised eight audio-led sessions of one to two hours each (Tubesing and Tubesing (1973)). The interviews were rated by trained observers using the nine point Accurate Empathy Scale developed by Traux and Carkhuff (1967). After training, there was a significant improvement in level of empathy demonstrated by the experimental group and no difference was found in the control group. Participants who had been trained also performed significantly better in their post-training interview than did the control group in their pre- or post-test interviews.

To examine the longer-term influence of the training programme, 25 of the students who had received training were asked to complete a further interview three years later, when they were in the fifth year of their medical course. Although there was a significant drop in their performance from the post-training interviews to the follow up interviews, the experimental group still performed significantly better than the control group with comparable clinical experience.

Marteau and colleagues (1991) examined factors influencing medical students' communication skills. Two groups of first year clinical students were examined. One group had received teaching in communication skills during their first clinical year, the second group had not.

Students were allocated to an intervention or control group. Those receiving communication skills were taught how to begin and end an interview, the techniques of active listening, facilitation, and how to identify and respond to verbal and non-verbal cues. Students were taught in groups of 12 which met for one and a half to two hours on six occasions spread throughout the first clinical year. Each group used a range of methods such as role play, video-feedback, small group discussion and trigger videos. A trigger video is a video that is designed to stimulate discussion in a group. For teaching communication skills in medicine such a video usually contains a series of short film clips of medical consultations illustrating skills, behaviours and attitudes that the audience will be encouraged to comment on and discuss.

As part of the evaluation, all students interviewed a simulated patient; a person trained to present the same case to all students. Data were gathered on the number of times a particular behaviour or skill was employed, as well as on a variety of outcome measures assessing the consultation from the point of view of the simulated patient and an independent observer. Skills were assessed using an adapted version of the interview rating scale developed by Maguire, Fairbairn and Fletcher (1986), inter-rater reliability was described as 'adequate'. Both simulated patients and independent observers rated the interviews for warmth, competence, self-assurance and empathy. The influence of communication skills training was apparent only in the ratings on empathy given by the simulated patients. Students who had received the communication skills training were rated as more empathic. When the skills themselves were assessed, gender of student was a more significant predictor of level of skill than training. Female students demonstrated a higher level of communication skill than male students.

Evans and colleagues (1992) compared medical students who had received specialised interviewing skills training with a control group of students who completed an equivalent number of hours in additional patient clerking. The communication skills programme consisted of a series of lectures on communication theory and skills, followed by small group practice in communication techniques and interview training. The course was taught over several weeks and required 11 hours in total. All students completed a 20-minute history taking interview with a general medical or surgical patient who was ambulatory and well enough to take part in the study, before training, after the lecture course and again after completion of the whole course.

Independent observers, who had received 10 hours training, rated the 20 minute history-taking interviews from videotape. Inter-rater reliability checks were carried out after five and 10 hours training. The training was carried out on practice videotapes using behavioural criteria for each level of 16 dimensions. By the end of the 10 hours training, consistency between the two observers had reached a correlation of 0.89. The 16 dimensions covered 14 behavioural skills and 2 ratings of student attitude, warmth (the student's expressed acceptance of the patient as a person) and empathy (the student's expressed understanding of what the patient is feeling and communicating).

The students who had received communication skills training were rated by the observers as showing a significantly increased level of interpersonal warmth compared to the students who had not received training. Across the three videotaping sessions, control group students showed a decrease in empathy.

Moore and colleagues (1994) describe a randomised controlled trial evaluating the impact of a new curriculum, covering 4 years of training, at Harvard Medical School. The comprehensive new curriculum had objectives which encompassed all three domains: affective, behavioural and cognitive. The aim of the new curriculum was to teach the students humanistic knowledge, attitudes and skills. Students following the new curriculum were compared with those following the old curriculum on several outcome variables including knowledge, skills, attitudes and behaviours.

Students conducted consultations with simulated patients. Students following the new curriculum demonstrated significantly greater behavioural science knowledge and characterised themselves as significantly more empathic, more comfortable with emotions, more tolerant of ambiguity and more patient-centred than did control students following the old curriculum. Students on the new curriculum also demonstrated greater empathy and comfort with emotional issues, as well as strong patient-centred orientation in interactions with simulated patients.

Simulated patients rated the interviews with students on four global items from the Arizona Clinical Interview Rating Scale (ACIRS) (Stillman, Savers & Redfield, 1976) "Would you do what this doctor asks you to do?" "Would you recommend this doctor to a friend who wanted a doctor with excellent communication skills?", "Would you make a special effort to see this doctor", and "How would you compare the personal manner (courtesy, respectfulness sensitivity, friendliness) of this doctor compared to other doctors you have seen?" to give a composite score for satisfaction. The simulated patients also rated their perception of student's level of empathy and regard for the patient.

The students following the new curriculum displayed better communication skills, elicited higher levels of patient satisfaction, collected more information during their patient encounters, and expressed more awareness of the importance of the doctor-patient relationship than the students following the traditional curriculum.

A study that assessed the long term outcome of training communication skills using feedback was conducted by Maguire (1990). He reassessed 36 young doctors who had received either video feedback training or conventional teaching in interviewing skills during a psychiatry clerkship five years before, when they were medical students. The doctors were assessed on 45 interviewing skills and four overall ratings - self-assurance, warmth, empathy, and competence shown throughout each interview. To assess reliability 15 interviews of the 108 recorded were independently assessed by two people and the kappa coefficient was used to determine variation between assessors. Agreement was generally 90%.

Doctors trained in communication skills were assessed as being significantly more warm, empathic, self assured, and competent than the doctors in the control group.

12.2.3 Medical Students Training: critique

Communication skills teaching is now allocated time in the curriculum of most medical schools. The format of the teaching varies enormously, involving, for example, lectures, small-group discussion, role-play, audio and video tape review, as does the amount of time attached to the subject. Evidence is accumulating that teaching particular skills and behaviours to medical students improves the appropriate use of such skills, at least in the

short term. Both Sanson-Fisher and Poole (1979) and Maguire (1990) have evidence of longer term effectiveness as both studies reported that students who had received empathy training were still demonstrating significantly more empathy than control students some three years later.

Communication skills teaching can be successful at improving skills. The intervention studies reviewed above have used a range of formats for teaching communication skills. Given the largely uncontrolled nature of the studies it is not known which particular features of teaching have the largest impact, either on the skills to be learned, or on patient satisfaction with the medical consultation. The extent to which this is the most efficient way of using resources to improve doctor-patient communication has yet to be determined.

While communication skills training programmes for medical students strive to enhance future doctors' ability to gather information, give information, build rapport and negotiate with patients, communication skills programmes are rarely evaluated for their impact on patients' experiences of consultations. In addition, there is little evidence that any particular skill influences the long term health status of the patient.

12.3.1 Doctors: introduction

Several studies describe interventions designed to change the behaviour of doctors with regard to their communication skills and examine the impact of such training on patient outcomes. Most intervention studies with doctors have been conducted in primary care with general practitioners. Details of studies which have considered the effects of such

interventions upon patients are given below (see Table 12.2)

Table 12.2 Communication skills programmes for doctors with an outcome related to patient satisfaction

Key: NR = Not reported

	Bertakis **USA** **1977**	**Bird and Lindley** **UK** **1979**	**Evans, Kiellerup, Stanley, Burrows and Sweet** **Australia** **1987**
Participants **Number**	Family practitioners n = NR	General practitioners n = 3	General practitioners n = 40
Length and Content of Intervention	NR Doctors told to ask patients to repeat the information they had just been given. Doctor then reiterated the information the patient had forgotten or misunderstood.	1 ½ hours Videotaped interviews with a simulated patient reviewed by doctor and peers. Didactic seminar on interviewing skills. Viewing four videotapes modelling effective and ineffective interviews.	6 hours Lecture on patient satisfaction and adherence. Discussion on communication skills. Written summary of skills.
Method of assessment	Patient interview audio- tape recorded. Patient completed a questionnaire. Content analysis of interviews.	Interviews rated by three independent raters.	Patients interviewed after their consultation .
Outcome	Patients of doctors in experimental group were: 1) more satisfied 2) retained more information.	Post training interviews consistently judged "Better" by the raters.	Patients of doctors in experimental group were: 1) more satisfied 2) less anxious.

Table 12.2 continued

	Putnam, Stiles, Jacob and James **USA** **1988**	**Cherkin, Deyo, Berg, Bergman and Lishner** **USA** **1991**	**Smith, Osborn, Hoppe, Lyles, Van Egeren, Henry, Sego, Alguire and Stoffelmayr** **USA** **1991**
Participants **Number**	Medical Residents 19	Primary Care Clinic staff 29	Community based primary care doctors 28
Length and Content of Intervention	3.7 hours Two group sessions on specific skills. 5 or 6 individual sessions reviewing audio taped consultations. Manual on skills to encourage patient exposition and doctor explanation.	1 ½ - 2 hours 3 sessions 1 - Lecture on benefits of improved doctor-patient interaction. 2 - Summary of management of low-back pain patients. 3 - Viewing videotape of good and poor role models.	Training contained within a one-month program Seminars based on assigned readings. Demonstrations. Roleplay. Feedback. 3 - 4 supervised interviews weekly.
Method of assessment	Content analysis of audio-taped consultations. Patient completed questionnaires.	Patient assessment of satisfaction with care. Questionnaire self-assessment of knowledge, confidence and patient-reassuring bheaviour.	Questionnaire assessment of psychosocial knowledge, skills and attitudes.
Outcomes	No effect of training on 1) patient satisfaction, 2) adherence 3) symptom improvement.	No effect of training in patient assessment of satisfaction with care. Self-assessment showed increases in knowledge, confidence and patient-reasuring behaviour.	Trained group showed greater gains in knowledge, attitudes and self-awareness.

Table 12.2 continued

	Levinson and Roter **USA** **1993**	**Smith , Shaw, Slack and Marteau** **UK** **1995**	**Roter, Hall, Kern, Barker, Cole and Roca** **USA** **1995**
Participants **Number**	Primary care doctors 53	Health professionals in Obstetrics 35	Primary care doctors 69
Length and Content of Interventionn	2 interventions were assessed. 4 ½ hour workshop Didactic presentations and case-based discussion focusing on 4 fundamental skills in the interview. and 2 ½ day course A leaner-centred course with no set curriculum working in small groups.	2 interventions assessed. Group 1 - A one hour discussion based on a trigger video. Receipt of Booklet Receipt of Prompt card. Group 2 - The above plus participants received feedback on their communication skills.	8 hours Didactic presentation of relationship between communication skills and positive patient outcomes. Discussion. Interactive presentation. Written bibliography and summaries of targetted communication skills. Practice with simulated patients Homework between the sessions - participants had to tape themselves practising their new skills.
Method of assessment	Content analysis of audio-taped consultations with patients.	Content analysis of audio-taped consultations.	Content analysis of audiotaped consultatons with patients and simulated patients.
Outcomes	Short programme - no differences. Long programme - increases in a information giving and amount of psychosocial talk by patient	Group 1 - improved communication skills. Group 2 - improved communication skills and information giving.	Trained doctors used more problem-defining and emotion-handling skills.

12.3.2 Communication skills training for doctors

With the hypothesis that patients are more satisfied with their doctors when they are given and retain more information about their illnesses, Bertakis (1977) conducted a study to test this. At the end of the consultation patients in the experimental group were asked by the residents to repeat in their own words the information which they had just been given. The doctor was then able to repeat the information which the patient had forgotten or misunderstood. Patients in the control group were not asked this question.

The methodology used to encourage doctors to ask their patients about the information they had just been given was not described. Immediately after the consultation patients in the experimental group retained more information and expressed higher levels of satisfaction than did patients in the control group.

Evans and colleagues (1987) developed a training programme for general practitioners based on the work of Maguire and Rutter(1976) and Maguire (1976). They supplemented this with the results of research on patient satisfaction conducted by DiMatteo and Friedman (1982). These authors suggested that patient satisfaction with medical consultations may best be achieved by the doctor giving the fullest possible information regarding the condition, treatment and prognosis (the cognitive aspect) in an atmosphere of warmth, friendliness and respect (the emotional aspect). The aim of the study was to increase patients' satisfaction with general practice consultations.

Doctors who had agreed to participate in the study were randomly allocated to experimental and control groups. Ten patients of each participating doctor were

interviewed before any training was undertaken. After the training period a further 10 patients of each participating doctor (experimental and control) were interviewed.

Doctors in the experimental group attended two, three-hour seminars. These seminars covered common communication deficiencies exhibited by medical students and practitioners, a detailed analysis of the history-taking format used by many general practitioners and suggested techniques for increasing patient satisfaction. In addition, research into the area of patient comprehension and recall and issues of patient adherence were examined and discussed. Techniques for avoiding or minimizing these problems were presented and discussed. Doctors were provided with a summary of this literature in writing. Patients of trained doctors reported significantly higher overall satisfaction (as assessed by the Doctor-Patient Communication Survey (Evans, 1983) than patients of doctors in the control group.

Putnam et al (1988) examined medical residents in the second year of training. The intervention study was designed to determine whether changing doctors' interviewing behaviours would change patient outcomes. The study concentrated on two interviewing behaviours: encouraging patients to talk about their concerns in their own words (patient exposition) by the use of active listening, respectful silence, verbal encouragement and occasional reflections by the doctors; and giving patients medical information. Training for each resident averaged 3.7 hours and consisted of one or two group sessions followed by five or six individual sessions reviewing audiotapes with a trainer. Each participant was also given a short manual that described and gave examples of patient exposition and doctor explanation.

The interviews were coded from audiotapes by independent raters. Three patient outcomes were assessed: patient satisfaction, patient adherence and symptom improvement. Patient satisfaction was measured immediately after the visit by the Medical Interview Satisfaction Scale (MISS) (Wolf et al, 1978). Patient adherence was assessed one week after the visit through a structured telephone interview on a four-point scale. The outcome measure, symptom improvement, was the change score between symptom status assessed immediately before the patient saw the doctor and symptom status assessed again in the telephone interviews one week later.

Training increased the mean frequency of patient exposition and the percentage of doctor explanations. There was no effect of training on patient satisfaction, patient adherence or symptom improvement.

An intervention study to train family physicians how to manage patients with low-back pain was conducted by Cherkin and colleagues (1991a, 1991b). The intervention was carried out on seven different sites in the USA with 29 participants. The primary goal of the intervention was to increase doctor comfort and confidence with the management of back pain, and to encourage them to provide their patients with additional information and reassurance. The intervention was carried out either over three sessions covering a period of two hours or in a single 90 minute workshop. The multi-faceted intervention included lectures, a summary of the scientific evidence on the benefits of improved doctor-patient interaction, and a 25 minute videotape. The videotape contrasted an exemplary clinical approach with an inadequate one, emphasizing key aspects of the doctor-patient interaction such as techniques for providing patients with satisfying explanations of why

they were in pain.

To assess the impact of the intervention on patients, they were telephoned two to four weeks after their back-pain visit and asked about symptom improvement, amount of disability and satisfaction with care. Patients who were seen before the doctor intervention were compared with patients seen after the educational intervention. The intervention did not result in significant improvements in any patient outcomes. The intervention significantly improved perceived doctor knowledge, confidence, and patient-reassuring behaviour in the treatment of low-back pain. The percentage of providers who believed their patients were very satisfied with their care for low-back pain almost doubled.

The study lacked any objective measure of differences in doctor behaviour and it is not possible therefore to determine if the doctors behaved in a different manner, or gave different or additional information after the intervention. In addition there was no group of doctors acting simply as controls for any external event, such as relevant journal articles, items in the press, that may have influenced attitudes to giving information and treatment for low-back pain. This result, where doctors perceive an improvement in skills, but with little evidence of an actual change in skill and with no perceptible improvement in patient outcomes may be harmful as it may block doctor's receptiveness to further training. Marteau and colleagues (1991) working with medical students found no association between confidence and competence. The doctors in Cherkin's study may have required the opportunity to rehearse the skills that were discussed before putting them into practice.

Bird and Lindley (1979) took three very experienced general practitioners and focused on skills required to change attitudes and behaviour of patients. Doctors carried out baseline interviews lasting five minutes, with the same patient. After a brief discussion two items were chosen and agreed upon as goals for the next interview. The types of goals identified were "the patient to make a convincing statement that he has a drink problem" and "the patient to make a convincing statement to a concrete first step in changing drinking behaviour"(sic). The doctors were instructed to keep these two goals constantly and clearly in mind during the interviews that followed. No instruction or any other form of training concerning how to achieve these goals were given. The three interviews were then repeated.

Doctors then received a further one and a half hours training. During this period the doctors watched replays of their second interviews while these were rated by their peers. This was followed by a brief didactic seminar on interview skills concentrating on empathy, shaping (responding differentially to desirable comments by the patient) and role variations. Finally, four modelling tapes were shown demonstrating two effective, one ineffective and one partially successful attempt at conducting the same interview. A brief discussion of the techniques shown in the modelling tapes took place before doctors repeated their test interviews for a third time. All nine tapes were rated by three independent judges who had no knowledge of the events of the training day. Two of the three participants' ratings by non-blind peers showed consistent moves in the predicted direction; that is, towards the goals that were established after the first interview. Bird and Lindley concluded that the study offered some tentative support for the hypothesis that if relevant skills are already identified, then even very brief training will improve

results.

Three major difficulties are apparent: the small number of doctors who participated; the lack of a control group to establish any practice effect; and the inability to assess which of the various elements of the training package (video feedback, academic instruction, and modelling with commentary) were potent, and which redundant, in helping the doctors to change. Nevertheless this study provides a useful basis from which to develop further studies.

Smith and colleagues (1991) evaluated the efficacy of a one-month psychosocial training programme for first-year medical residents. The programme was a comprehensive one including assigned readings on essential topics for primary care and discussion of some of the salient features of an interview. These seminars were resident-led and facilitated by one of the authors. The vast majority of the teaching was experiential, skills-oriented and learner-centred, with demonstrations, role-play and feedback as the teaching methods used throughout the training. The competency-based objectives focussed on communication and relationship-building skills and on the diagnosis and management of psychologically disturbed medical patients. In addition, each doctor had three to four supervised interviews weekly, each session lasting approximately 60 minutes.

At the end of one-month of training the trained group showed significantly greater gains on questionnaire assessment of knowledge, self-assessment and attitudes. Fifteen months after the training, there was no significant deterioration in attitude scores. On a systematic rating procedure, all trainees were also able to identify previously unrecognised,

potentially harmful personal responses.

The authors identify that methodological problems precluded an assessment of residents' skills or an assessment of patient outcome and that further work is required to show that such an intensive educational intervention translates into something meaningful for the patient. However, this study does identify specific elements of a comprehensive training programme that was successful in improving relevant knowledge and attitudes.

Levinson and Roter (1993) evaluated and compared the effects of two continuing medical education programmes on the communication skills of practising primary care doctors. Fifty-three doctors, 44 men and nine women participated. All the doctors were white except for one Asian. Prior to the programmes doctors were audio taped during five consultations.

The short programme (4½ hours) included didactic presentation and case-based discussions focusing on four skills in medical interviewing: engaging patient participation, communicating empathy, educating patients, and enlisting patients in health care discussions. The long programme (2½ days) is founded on the principles of learner-centred learning. The programme did not include a set curriculum but allowed individual participants to identify their own learning needs and to use programme resources to obtain them. Participants worked in groups of four with one facilitator. The audiotapes were content-coded by judges who were blind to the study group of doctors using the Roter Interactional Analysis System (Roter, 1991).

Levinson and Roter reported no evidence of an effect of the short programme. The doctors in the long programme asked more open-ended questions, more frequently asked patients' opinions, and gave more biomedical information than did the doctors in the short programme. Patients of the doctors in the long programme tended to disclose more biomedical and psychosocial information. In addition there was a decrease in negative affect for both patient and doctor. This study provides support for the view that doctor-focused interventions require time to be built-in for doctors to have an opportunity to practice the skills that are being taught and to receive feedback on the effective use of those skills.

A study to assess the effects of two brief training interventions to improve the explanation given about a routine prenatal screening test by doctors and midwives was conducted by Smith and colleagues (1995). Baseline data were collected from an average of six patients of each health professional participating in the study by audio-tape recording the consultations. These interviews also formed the basis for individual feedback to the study participants on the communication skills they had exhibited during the interviews.

Health professionals were randomly allocated to one of two intervention groups or a control group. Both intervention groups received a one-hour training session involving small group discussion triggered by a video. In addition, one group received individual feedback on their baseline and post-training consultations. The aim of the interventions was to increase the amount of information routinely provided on a prenatal screening test, and to improve the communication skills used when presenting the information. The video which participating health professionals viewed showed models of health

professionals giving information which was used to trigger discussion about the reasons behind the behaviours seen. Participants in the feedback group received feedback after the training session. Each participant was presented with transcripts of his or her consultations and the strengths and weaknesses were discussed. Further sets of interviews were then taped for each study participant immediately after the intervention and again three months later.

Thirty-five participants completed the study. Participants who received training and feedback improved significantly on both the amount of information given and the way in which it was presented. However, only 27% of health professionals invited to participate did so; and those completing the study had better baseline communication skills than those who did not. Thus, while brief training was to some extent effective, the majority did not avail themselves of it, and those who did had better pre-existing skills.

Roter and colleagues (1995) conducted a randomized clinical trial to evaluate interventions designed to help doctors address patients' emotional distress. Sixty-nine primary care doctors (13% of all eligible doctors) were randomized to a no-training control group or to one of two communication skills training courses. The training intervention comprised two 4-hour sessions, one week apart.

The first two hours of the first session consisted of a 20-minute presentation on the rational for the Continuing Medical Education (CME) program, a 40-minute, informal, discussion with participants on the prevalence and types of psychosocial problems they typically encountered in their practices and a 40-minute interactive presentation by a

liaison psychiatrist on common disorders (anxiety, depressive and somatoform disorders) and how these present in primary care. Doctors were given a syllabus with an overview of the epidemiology, clinical characteristics, and management of psychiatric disorders common in primary care, a bibliography and case examples, operational definitions of the communication skills to be taught and cards that summarised the targeted communication skills. The second two hours of the first session and the whole of the second session were spent practising the targeted skills with a simulated patient. Between the first and second session doctors taped themselves practising their new skills with one or two of their own patients. Five-minute segments of these tapes demonstrating effective or ineffective use of the skills formed the basis for the second session.

Audiotape analysis of actual and simulated patients showed that trained doctors used significantly more problem-defining and emotion-handling skills than did untrained doctors, without increasing the length of the visit.

12.3.3 Doctors Training: critique

The majority of the communication skills training programmes have been successful in improving doctors skills' in the short term. Elements of successful programmes appear to be a rationale or discussion about the need to change, an opportunity to rehearse the targeted skill, and an opportunity to get feedback on these skills whether it is from role play, or audio or videotaped consultations. The next steps will be to determine whether the use of improved skills lead to better patient outcomes and whether the changes seen in the short term persist over longer periods of time.

12.4.1 Patient-focused communication skills training: introduction

Patients have also been targeted with the aim of changing doctors' behaviour during medical consultations and enhancing patient satisfaction.

These studies address the issue from two sides. Not only do they attempt to change the behaviour of the patient in ways hypothesised to be useful to the patient, but in the long term they may also change the doctor's behaviour. If, for example, a doctor is persistently confronted by patients who ask for explanations when they do not understand or who ask questions if they do not have enough information, this experience may encourage doctors to reflect upon their own communication skills and how they could be improved.

Several studies have worked with patients themselves to increase their satisfaction either with hospital consultations or with care received during hospitalisation, using a variety of methods. Interventions with patients tend to be more directive than interventions designed for medical students or doctors, which tend to be more learner-centred. Patients are encouraged to think about what they would like from a consultation or a hospital visit and then are told about and encouraged to use specific techniques to achieve the identified aim.

If interventions with patients are successful they suggest ways that patients can enhance the quality and amount of communication they receive, and enhance their level of satisfaction with the consultation regardless of the doctor's ability to communicate. Table 12.3 describes patient-focused communication skills training programmes.

Table 12.3 Patient-focused communication skills training

Key: NR = not reported

	Ley **UK** **1976**	**Roter** **USA** **1977**	**Robinson and Whitfield** **UK** **1985**
Participants **Number**	Medical inpatients NR	General medical patients n = 294	General Practice n = 192
Length and Content of Intervention	Less than 5 minutes. An extra visit by the doctor to check patient's understanding.	10 minutes. Patient questions identified, clarified and written down. List taken into consultation.	Time required to read information. Two interventions assessed. Group 1 - receipt of explicit permission to ask questions. Group 2 - as above plus written guidance on how to check own comprehension.
Method of assessment	NR	Analysis of tape recorded consultations. Patients completed a 15 minute interview/questionnaire	Analysis of audio-taped consultations. Taped interviews with patients after their consultation.
Outcome	Increased patient satisfaction	Experimental patients: 1) asked more direct questions. 2) expressed less satisfaction 3) expressed more negative affect.	Patients in Group 2 asked more relevant questions and made fewer errors and omissions in their accounts of the consultation.

Table 12.3 continued

	Anderson, DeVellis and DeVellis **USA** **1987**	**Greenfield, Kaplan, Ware, Yano and Frank** **USA** **1988**
Participants **Number**	General medical NR	Diabetic n = 32 Medical ambulatory n = 27
Length and content of Intervention	Time required to view video tape. Patients viewed one of three video tapes. Group 1 - viewed a simulated patient asking questions . Group 2 - viewed a simulated patient revealing problems. Group 3 - only saw the health professional.	2 x 20 minute sessions Medical decisions likely to be made in the consultation were identified. Patients rehearsed negotiation skills and techniques for overcoming obstacles to communication. Patients encouraged to ask focused questions.
Method of assessment	Evaluation of patient interaction in a one-to-one education session.	Analysis of audio-taped consultation. Follow-up questionnaire completed by patients.
Outcome	Patients in both experimental groups: 1) spoke more 2) were more satisfied with the consultation.	Experimental patients were 1) more effective in eliciting information 2) reported fewer functional limitations and 3) had better blood glucose control. No differences in patient satisfaction and knowledge of disease

Table 12.3 continued

	Thompson, Nanni and Schwankovsky USA 1990 Study I	Thompson, Nanni and Schwankovsky USA 1990 Study II	Weinberger, Tierney, Booher and Katz USA 1991
Participants **Number**	Obstetric and gynaecological patients n = 53	Obstetric and gynaecological patients n = 49	Osteoarthritis NR
Length and Content of Intervention	NR Receipt of written instructions to write down at least 3 questions to ask. List taken into consultation.	NR 2 interventions assessed. Group 1 - receipt of a checklist of information to be obtained and instructions to write down 3 questions. Group 2 - Written message from doctor encouraging patients to ask questions.	NR 3 interventions assessed. Group 1 - increased contact with health professional by telephone. Group 2 - increased contact in clinic. Group 3 - increased contact by telephone and in the clinic.
Method of assessment	Questionnaire completed by patient.	Questionnaire completed by patient.	NR
Outcome	Experimental group: 1) asked more questions 2) were less anxious. No difference in patient satisfaction.	Experimental patients were: 1) more likely to ask all the questions they wished to 2) more satisfied with the visit 3) more satisfied with the information communicated.	No effect on satisfaction with care, adherence with medication.

Table 12.3 continued

	Rost, Flavin, Cole and McGill **USA** **1991**	**Butow, Dunn, Tattersal and Jones** **Australia** **1994**	**Frederikson and Bull** **UK** **1994**
Participants **Number**	Diabetic patients n = 61	Cancer patients n = 92	General practice patients n = 80
Length and Content of Intervention	1 hour 45 minutes 45 minute discussion with patient on information seeking and decision making. Questions written down. 1 hour self-administered booster.	Time required to read information Group 1 - receipt of question prompt sheet Group 2 - receipt of general information sheet	Time required to read leaflet. Receipt of leaflet encouraging a prepared approach to the consultation..
Method of assessment	Patient behaviour in discharge discussions.	Content analysis of consultation. Structured interview and questionnaire completed by patient.	Doctor rating of communication as poor, average or good.
Outcome	Experimental patients asked significantly more questions. Four months later experimental patients had fewer physical limitations.	Receipt of question prompt sheet increased question asking about prognosis. No effect on total number of questions asked, duration of patient talk, or patient satisfaction.	Experimental patients more likely to have their communication rated as good.

Table 12.3 continued

	McCann and Weinman UK 1996	Ford, Fallowfield, Hall and Lewis UK 1995
Participants **Number**	General practice n = 120	Medical oncology n = 117
Length and Content of Intervention	Time required to read leaflet Receipt of written leaflet to encourage participation in the consultation	Receipt of audiotape of previous consultation.
Method of assessment	Analysis of audio-tape recorded consultation. Patient completed questionnaire.	Analysis of audio-tape recorded consultation.
Outcome	No significant difference on question asking or patient satisfaction	Experimental group patients: 1) asked for more clarification 2) the ratio of patient/doctor talk was higher.

12.4.2 Patient-focused communication skills training

Ley (1976) attempted to increase patient satisfaction with medical consultations by increasing understanding. He arranged for an experimental group of medical inpatients to receive extra visits from a doctor during which the doctor tried to ensure that patients had understood what they had been told. To counteract any effects on satisfaction of receiving extra attention, a placebo control group of patients also received extra visits from the doctor, but the conversations were about adjustment to hospital, problems caused by hospitalization, and ways in which hospitalization could be improved for

patients in general. A third group received no extra visits. Ley reported that 80% of the experimental group were satisfied with communications as compared to 52% of the attention control and 41% of the control group.

Running the above intervention with surgical inpatients was not successful in increasing satisfaction (Ley and colleagues, 1974) although there was a significant correlation between reported understanding and satisfaction with communications.

A study to assess the effects of a health education intervention to increase patient question asking during consultations was conducted in 1977 by Roter. The intervention was designed to take into account three groups of factors identified as influencing patient participation in medical consultations: enabling factors; predisposing factors; and reinforcing factors. Enabling factors were defined as patients' abilities to articulate and rehearse questions. Predisposing factors for patient information-seeking were identified as the perceived importance of questions, the patient's belief in the acceptability of asking questions, the patient's expectation for information, his/her locus of control, and the value s/he places on health. Positive responses from providers to patient questions were considered reinforcing factors for question-asking behaviour, as was the reward of relieved anxiety from the receipt of sought-after information.

The intervention consisted of a ten-minute session with a health educator prior to the patient's visit with the doctor. The health educator, together with the patient, worked through a question- asking protocol to identify questions the patient had concerning their illness or treatment. When a question was identified that the patient wanted to ask it was

written down by the educator and read back to the patient with a request for clarification from the educator that what they had just said was in fact what the patient wanted to ask. At the end of the session the educator read back to the patient the list of questions that had been identified and gave the list to the patient to take into the consultation. The session ended with a statement from the educator providing support and approval for asking questions during the consultation.

To control for any possible attention effect, a second intervention was designed where the health educator again conducted a ten-minute one-to-one session with a patient. This intervention was structured so that the patient was an active participant in the interaction and the educator provided patients with instructions and information about the use of the clinic. These patients were provided with an information sheet to take into the consultation in an effort to "blind" clinic doctors to the group membership of the patient.

Patients in the experimental group asked significantly more direct questions (questions raised clearly by patient initiative) than those in the placebo control group, as assessed from typed transcriptions of audiotape recordings of the medical consultations. The experimental group patients also reported significantly higher levels of anxiety and anger than placebo group patients. Consistent with these findings of negative affect, experimental group patients were less satisfied with the visit they had just completed than were placebo group patients. Despite this decrease in satisfaction, they were more likely to attend future appointments than the control group. Doctors of the experimental group patients reported higher levels of anger and lower levels of sympathy than the doctors of placebo group patients. There was no measure of their satisfaction with the consultation.

An explanation put forward by Roter to explain these findings is that patients and doctors were neither prepared for, nor comfortable with, the active patient role. Doctors expect patients to be passive. When they encounter patients asking questions, their expectations are disconfirmed; the reported increase in negative affect suggests that the disconfirmation was negative.

A study aimed at increasing patient activation and reducing misunderstandings or forgetting of information given by the doctor during a general practice consultation was conducted by Robinson and Whitfield (1985). They focussed on the discussion about treatment within a consultation. Patients were allocated to one of three groups: normal, permission or guidance. Patients in the normal group were given a sheet of paper which told them that their doctor was tape-recording his surgery and that the tapes would be used to research into how well doctors and patients understood each other. The patients were also told that they would be asked after the consultation whether they were willing to be interviewed. Patients in the permission group received the same information as those in the normal group as well as a second sheet of paper which gave explicit permission to ask questions. Patients in the guidance group also received the same information as those in the normal group together with a second sheet of paper which gave explicit guidance about how to check their understanding of instructions given by the doctor.

Patients in the guidance group asked more questions, made more comments and reported fewer errors and omissions than patients in the normal or permission group. There was no measure of satisfaction with the consultation and all the patients reported in the

interview that they understood what the doctor wanted them to do.

A study to enhance patient communication during consultations by role modelling was conducted by Anderson, DeVellis and DeVellis (1987). Patients were randomly allocated to one of three interventions. One group saw the patient-model asking questions during the course of the consultation; the second group watched a video with the same health educator but this time the patient revealed problems; the third group of patients, the control group, only saw the educator's presentation: no patient was shown.

Following the video, patients had a face-to-face education session which assessed the impact of the intervention on patient communicative behaviours. Participants in the two experimental groups spoke more than participants in the control condition. The intervention involving the question-asking model was more effective in eliciting communicative behaviours from the patients than the intervention with the disclosure model. Participants in either experimental condition who spoke more indicated higher levels of satisfaction with the emotional tone of the consultation.

The premise that to maximise disease control, patients must participate effectively in their medical care was the starting point for Greenfield and colleagues (1988). They designed a comprehensive intervention to increase patients' participation in medical decision-making during the consultation. Patients attending a diabetes clinic were randomly allocated to experimental or to control interventions. Patients received the intervention to which they had been allocated on two consecutive visits to the clinic. The purpose of the experimental intervention was to improve information-seeking skills so that patients could

interact more effectively and participate more actively during the consultation.

Those in the intervention group received a 20-minute session just before the visit to the doctor, in which a clinic assistant reviewed patients' records with the patient, guided by a diabetes algorithm. Using systematic prompts, the assistant encouraged patients to identify the relevant medical decisions likely to arise during their current visit. Patients were encouraged to rehearse negotiation skills and to ask focused questions. The research assistant then reviewed obstacles to asking questions, such as embarrassment, forgetfulness or doctor intimidation, and rehearsed simple techniques for overcoming such obstacles. The experimental group was compared to a control group who received standard educational materials about diabetes in sessions of equal length to those given to the experimental group.

Experimental patients were twice as effective as controls in eliciting information from the doctor. Experimental patients reported fewer functional limitations at their next scheduled follow up visit, typically 12 weeks after the previous visit, and were found to have better blood glucose control than control patients. There were no significant differences between experimental and control groups in patient satisfaction or in knowledge of disease. Greenfield and colleagues reported that the better blood glucose control for experimental patients was not due to more rigorous treatment regimens. They suggested that closer adherence to existing regimens resulting from a greater sense of involvement in the medical process may have been responsible for the reduction in blood glucose among experimental patients.

If patients could get more information from their doctors this would result in them being more satisfied with the consultation was the hypothesis that Thompson, Nanni and Schwankovsky tested (1990). Patients who take an active role in a consultation can request clarification or additional information if their understanding is incomplete and thereby increase the likelihood that issues central to their concerns are addressed. Thompson and colleagues conducted two studies to increase patient involvement in medical consultations. In the first study, women in both the experimental and control groups received an envelope while waiting to see their doctor. The women in the experimental group received an envelope containing a list of possible health concerns and instructions to write down at least three questions they might have for their doctor. Women were instructed to take the list into the visit so they could refer to it while talking with the doctor. Women in the control group were given a similar envelope which contained a questionnaire about the waiting room, to be completed while they waited for their appointment. Outcome measures included the number of questions asked, level of patient anxiety, patient satisfaction, and doctor satisfaction with the consultation.

Women in the experimental group asked significantly more questions as judged by self reports of doctors and patients, and reported significantly less anxiety than the control group patients. There was no difference between the groups in satisfaction with the consultation.

The second study was conducted to clarify some of the findings from the initial study. Women were allocated to one of three groups. In this study one group received a checklist of information to be obtained during the visit instead of the list of general health

topics, as well as written instructions to write down at least three questions as in the first study. A second experimental condition was added to explore the possibility that being asked to identify questions in the waiting room encouraged patients to think that the doctor they were about to see was particularly receptive to questions. In this condition patients received only a written message, that the doctor encouraged them to ask questions. The control group received the same questionnaire as in the initial study.

Patients in the experimental groups reported a higher level of general satisfaction and more satisfaction with the information communicated than control group patients. There were no significant differences between the two experimental groups. No significant difference was found between the three groups in the number of questions asked. There was no association between satisfaction with the office visit and the number of questions asked during the consultation.

The two interventions seemed to be equally effective at changing behaviour of patients in consultations and patient satisfaction during a medical consultation. This suggests that the active element of the interventions is permission-giving, which was implicit in the first experimental condition and explicit in the second experimental condition. Using Roter's framework, these results suggest that predisposing factors have a greater impact than enabling factors in encouraging women to ask questions.

A major difficulty with this study is the way in which the number of questions asked by patients was assessed. Patients were asked to recall the number of questions they had asked in the visit in a questionnaire which they filled out at home. The doctor was asked

to estimated the number of questions the patient asked immediately after the visit. The validity of these measures was not assessed.

Other studies have assessed change in functional status as an outcome measure for interventions designed to change patient behaviour in medical consultations.

An intervention hypothesized to enhance psychosocial outcomes in patients with osteoarthritis was designed by Weinberger and colleagues (1991). The intervention was not designed exclusively for the use of doctors but for a number of health professionals. Patients were randomly assigned to one of three intervention groups which consisted of providing the same information to all patients, while the method of delivery changed. One group of patients received increased contact with a nonclinical interviewer by telephone, the second group was seen personally in the clinic, and the third group received increased contact both over the telephone and in the clinic. None of the interventions had any effect on social support, morale, satisfaction with care, or adherence with medication.

A randomized clinical trial of an intervention designed to enhance patient information seeking and decision-making was conducted by Rost and colleagues (1991). It was presented to patients with diabetes while they were in hospital. Control patients received a comprehensive three-day evaluation and educational programme, whereas experimental patients received the same educational programme plus a 45-minute patient activation intervention and a one-hour self-administered booster. Experimental patients asked significantly more questions than control patients during their discharge discussions. Four months later the experimental patients reported significantly fewer physical limitations in

activities of daily living than the control group. Rost and colleagues also reported that the intervention did not diminish doctor satisfaction with patient interactions. There was no measure of patient satisfaction.

A study evaluating a question prompt sheet designed to encourage patients to ask questions in the cancer consultation was conducted by Butow and colleagues (1994). Patients were randomised to receive either a question prompt sheet or a sheet of general information about the services available through the regional Cancer Council.

Questionnaires to assess patient satisfaction and adjustment to cancer were sent by mail and recall of information was assessed in a structured interview four to 20 days after the consultation. Overall, patients in the experimental group did not ask more questions than patients in the control group however 35% of patients in the experimental group asked questions about prognosis compared with 16% of patients receiving the information sheet. There was no difference in satisfaction with the consultation between the two groups.

The impact of a patient leaflet encouraging a more thoughtful and prepared approach to the consultation was assessed by Frederikson and Bull (1995). The leaflet was a single A4 page folded in half with the title "The Patient's Guide to Consultation"(sic). Inside the leaflet were statements instructing the patient to think about why he or she was attending, the problem experienced, worries, and what the doctor can do. The patient was also instructed to tell the doctor all these things clearly, concisely and early on in the consultation. Finally, the patient was urged to listen to the doctor and specifically to ask for more information on particular points of interest. The leaflet ended by pointing out

that the doctor was not a mind reader and relied on the patient to stop, think and tell the doctor all these things.

The single doctor in this study rated the communication as poor, average or good. Poor communication was defined as the patient giving the impression of holding back, evasion, lack of clarity, aggression, dishonesty/game playing and/or making late requests. Good communication was defined as the absence of the markers of 'poor' communication with the emphasis on clarity with the added condition that an element of empathy or mutual understanding was perceived. Average communication fell between these two extremes.

In terms of the proportion of consultations being perceived as good, average and poor communication there were clear differences between the control and experimental groups. For the control group 8% of consultations were rated as poor, 35% were rated as average and 57% were rated as good. The proportions in the experimental group were poor 2%, average 18% and good 80%. There was no assessment of patient satisfaction, feelings or concerns.

Another study that used a leaflet to empower patients was conducted by McCann and Weinman (1996). The study was designed to investigate whether the presentation of a leaflet, prior to the consultation, encouraging patients to identify and present their own ideas and questions during the consultation could increase patient participation in primary care consultations and increase subsequent satisfaction with the consultation.

The leaflet was designed to be read by patients as they sat in the waiting room. It

encouraged them to take a more active part in their consultations. The first half of the leaflet asked patients to identify the nature of their problems and to consider their ideas as to the causes, treatment and effects of the problems. Space was provided for patients to write down their ideas and concerns and they were encouraged to voice these during the consultation. The second half of the leaflet advised patients to state clearly to the doctor their own ideas and concerns about the illness. It also encouraged patients to ask questions about the diagnosis and treatment in order to be certain they understood and agreed with the doctor. The control group received a leaflet, "Eat for your Health" which was designed to be of similar appearance to the intervention leaflet.

McCann and Weinman reported that there was a trend for patients in the intervention group to ask more direct questions than those in the control group. The mean number of questions asked by patients in the control group was 2.37 and by patients in the intervention group, 3.26 ($p = 0.07$). There was no difference between the groups on satisfaction with the consultation or on any of the doctor's ratings.

A study that examined the effects of providing patients with an audiotape of a previous consultation on their level of participation during a subsequent consultation was conducted by Ford and colleagues (1995). Newly referred medical oncology patients were allocated to an intervention group (receipt of an audiotape) or control group (no tape) by the Cancer Research Campaign Clinical Trials Centre. Patients randomised to the intervention group were given a copy of their audiotape interviews after both consultations and encouraged to listen to them at home. Analysis of the tapes was conducted using the Roter Interaction Analysis System (Roter, 1991).

In the first consultation, no significant differences were found between the experimental and control groups. There was no significant difference in the mean number of questions asked during the second consultation between the experimental and control groups. Significantly more experimental group patients (77%) asked for clarification of at least one piece of information compared to the control group (57%) and the ratio of patient/doctor talk was significantly higher for experimental group patients in the second consultation.

12.4.3 Patient-focused communication skills training: critique

Of the 14 patient-focused intervention studies outlined above, six report no difference in satisfaction between experimental and control groups, three report an increase in satisfaction and one a decrease in satisfaction for the experimental group. The four further studies did not assess patient satisfaction although one reported that doctor satisfaction was not diminished by the intervention. Of the four studies that assessed the longer term impact of altering patient participation, three reported an improvement in functional status or limitations for the patients in the experimental groups. While this approach looks promising, future studies need to be designed to determine the situations under which different elements of the interventions are effective for different outcomes.

Each of the above intervention studies has worked with different study populations. Some of the work has been carried out exclusively with female patients, a lot of the work has been carried out in the USA and the initial work was carried out over 15 years ago when patient activation or empowerment was not as accepted as it is today.

The interventions have differed in intensity from an unspecified amount of increased contact by telephone, to a three-day evaluation and education programme, with most of the studies designed to be intensive but not too time consuming. Each of the intervention studies contain several different elements: patients have received time to think about questions they really wanted to ask; they have been encouraged to write their questions down; they have had their questions clarified by an independent assistant; they have had the opportunity to rehearse questions; they have taken their list of questions into the consultation; they have heard a statement of approval from an educator as they leave the room; some patients have received a written statement from the doctor that s/he likes patients to ask questions. Further research is needed in this area to determine the relative effectiveness of each of these methods and for those that are effective, the mediators of such effects.

12.5.1 Combined patient and doctor-focused communication skills training: introduction

The results of the studies reported in Chapters nine and ten suggest that improving satisfaction for the patient will increase the level of satisfaction of the health professional or vice versa. Two studies evaluated interventions designed for all the participants in a medical consultation (see Table 12.4).

12.5.2 Patient and doctor-focused communication skills training

A study to evaluate interventions designed to improve clinical contact in initial psychiatric interviews for patients in social classes four and five was conducted by Jacobs and colleagues (1972). The aims of the study included reducing dropout from treatment and

Table 12.4 Patient and doctor-focused interventions

Key: NR = Not reported

	Jacobs, Charles, Jacobs, Weinstein and Mann **USA** **1972**	**Lewis, Pantell and Sharp,** **USA** **1990**
Participants **Number**	Psychiatric outpatients n of patients = 120 n of doctors = 24	Paediatric visits n of patients = 141 n of doctors = 34
Length and Content of Intervention	15 minutes Experimental group patients - talk on what to expect from psychiatric treatment. Experimental group doctors - talk on the expectations and difficulties of lower class patients with psychiatric treatment. Four groups in study 1 - experimental patient with experimental doctor. 2 - experimental patient with control doctor 3 - control patient with experimental doctor 4 - control patient with control doctor.	Patients 10 - 15 minutes. Doctors - 1 hour Children - 10 minute video of boy modelling effective communication and assertiveness skills. Plus workbook in which to formulate questions. Practice of questions. Parents - 10 minute video which presented evidence about the importance of doctor-patient communication and vignettes in which a model parent demonstrated effective communication skills. Doctors - 1 hour training session including a 15 minute video presenting research evidence on health consequences of doctor-patient communication. Vignettes demonstrated a number of effective communication skills. Received research articles. After each study interview completed a self-assessment form. Receipt of booster 3, 15 and 18 months after the intervention.
Method of assessment	Data from medical records	Analysis of video-tape recorded consultations. Questionnaire for children, parents and doctors.
Outcome	Groups with one experimental member in the dyad more likely: 1) to have a definite treatment plan 2) to be categorised as improved. 3) Less likely to drop out.	Children in intervention group: 1) recalled more medication recommendations 2) reported greater satisfaction 3) reported greater preference for an active health role Doctors in intervention group: 1) included children in discussion of medical recommendations more often. No effect on parent satisfaction. doctor satisfaction or child anxiety.

increasing the number of sessions attended by patients. The interventions were incorporated into the routine day-to-day work of a walk-in psychiatric clinic and delivered by the chief resident in the clinic. Neither the doctors nor the patients included in the study were informed that a study was being conducted. The interventions for both patients and doctors were designed to alter their expectations of the consultation. Patients in the experimental groups received a 15-minute talk about what to expect from psychiatric treatment during their initial screening interview with the chief resident. Doctors in the experimental groups received a 15-minute talk which described the expectations that patients of lower classes had of treatment as well as the specific problems lower class patients present such as difficulties in exploring feelings, in accepting the concept of psychological motivation and in tolerating delay in receiving help. This talk was incorporated into the regular procedure the chief resident used to discuss new patients he had screened with the doctor to whom the patient was allocated.

There were four groups in the study. In group one the consultations were between a "prepared" patient and a "prepared" doctor, in group two the consultations were between an "unprepared" patient and a "prepared" doctor, group three had consultations between "unprepared" patients and "unprepared" doctors and group four had a "prepared" patient talking with an "unprepared" doctor. No assessment of satisfaction with the consultation was made, however, patients in the experimental groups (groups one, two and four) were significantly more likely; to be seen for more than five sessions, to be referred for long-term treatment, to have a definite treatment plan and to be categorised as "improved" than patients in the control group. There was also a trend for patients in the experimental groups to drop-out less than those in the control group.

The study did not include an objective measure of the consultations and it is not possible to determine if the behaviour of the participants in the four groups was different or if the behaviour of the doctor generalised across to other consultations.

The second study involving all participants in a consultation was a brief educational intervention to promote effective communication between three participants in a medical interview: doctors, children, and parents. The study, conducted in paediatric outpatient clinics was designed and tested by Lewis, Pantell and Sharp (1991). The intervention comprised three brief videotapes (one each for patients, parents and doctors) and written material. Both were designed to increase the competence and participation of children during paediatric medical visits by teaching skills and increasing motivation. They were administered during waiting room time. Control participants saw health education videotapes and received written materials of the same length as the experimental participants.

There were four shared aims for each tape: 1) to provide an opportunity for participants to think about the goals of the medical visit; 2) to suggest as an important long-term goal the child's development as a competent, responsible participant in health care; 3) to model some of the interpersonal and communication skills needed to achieve this goal; and 4) to provide research evidence suggesting the importance of a child-inclusive model of paediatric communication.

Each videotape was created for the specific target audience and each included an appropriate role model demonstrating communication skills. The videotapes for children

and parents were ten minutes in length and were viewed immediately prior to seeing the paediatrician. Children also received notebooks in which they could write questions for the doctor and information received from the doctor.

The videotape for doctors was 15 minutes in length. It was presented as part of a one-hour training session during which they also received research articles related to the health consequences of effective communication, examples of cognitively appropriate interviewing techniques for children of different ages, and an acronym designed to remind them of critical interviewing skills. The control group of doctors, children and parents received an educational intervention comparable in time and format to the experimental intervention.

The interventions were assessed both for their impact on the process and outcomes of the medical visits. The medical visits were videotaped and the content, direction, origin, and type of each statement was coded, with a mean interrater reliability of 0.92. Each child and parent was interviewed after the consultation and asked to complete a number of questionnaires related to the aims of the study. Doctors in the intervention group involved children in discussions and medical recommendations more often than did doctors in the control group; children in the intervention group recalled more medical recommendations and reported greater satisfaction and preference for an active health role than did control children. Parent satisfaction, doctor satisfaction and child anxiety did not differ between experimental and control groups.

12.5.3 Patient and doctor-focused communication skills training: critique

Two studies have examined interventions designed to promote effective communication between doctors and patients. Both studies attempted to incorporate a large part of the interventions into the day-to-day running of the targeted clinics, and both had some success in meeting their aims. The study in the psychiatric clinic may have been more successful if the doctors involved had been informed about the study and had had an opportunity to reflect on and practice relevant skills. The intervention in the paediatric clinic was successful in promoting active participation in the consultation by children and encouraging children to prefer an active health role, while not making the participants less satisfied with the consultation. This provides a good model, requiring replication before being implemented as part of routine paediatric care.

12.6 General critique

Some studies aimed at improving communication in medical consultations have been successful; others have not. Research in this area has provided a number of very promising methods and intervention components for improving communication in medical consultations. It is now necessary to determine which aspects of the multi-faceted packages are effective and the resources required to achieve the different outcomes.

The next chapter describes a study designed to explore which, if any, of three previously described elements, has the greatest impact on patient behaviour, patient satisfaction, doctor satisfaction and the longer term health status of the patient.

Chapter 13

Empowering patients: an experimental study to evaluate the effectiveness of three patient-focused interventions - methodology

13.1 Introduction

The previous chapter described research which has attempted to alter the behaviour of one or both participants in a medical consultation and examined the impact of the interventions on patient satisfaction with the consultation and their health status. The studies targeted three different groups: medical students, doctors, and patients. These studies met with limited success in increasing patient satisfaction with medical consultations and improving patients' health status. Given the study designs, where a change was reported in either patient satisfaction or health status it was not clear which components of the multi-faceted interventions were the effective ones. This chapter reports an intervention study designed to assess the impact of three simple components of earlier successful patient-focused interventions on patient and doctor satisfaction, and patient health status.

Patients were chosen as the target group for the interventions for four reasons. There are few, if any, reported studies of work carried out in the UK on the impact of changing patient behaviour in the medical consultation. Second, many patients are dissatisfied with the information they receive during medical consultations (Fletcher, 1980, Stiles et al, 1979b, Tucket and Williams, 1984, Williams, 1993) and may therefore be willing to try to alter their behaviour to remedy this situation. Third, there is some evidence to suggest that targeting patient behaviour has the most immediate impact on patient satisfaction and

consequently health status. Fourth, if patients are more satisfied with their consultations, their doctors may also be more satisfied (see Chapter 11). Roter (1977) identified enabling, predisposing and reinforcing factors as predictors of patient question asking (see Chapter 12). A complementary perspective involves identifying disabling factors or barriers to patients asking questions. These barriers can be divided into two categories: cognitive and affective.

Cognitive disabling factors include the patients' perceived lack of ability to ask questions, and their perception of time constraints on the consultation. They also include forgetting the question(s), and perceived unacceptability of asking questions. Affective barriers arise when patients anticipate feeling humiliated or embarrassed if they ask questions. When a doctor has given an explanation or instruction to a patient, the patient does not wish to appear stupid or forgetful by asking for clarification or further questions. Any feeling of embarrassment will be reinforced if the doctor ignores the question(s).

The interventions in the present study were designed to overcome these barriers and were based on the work of Roter (1977), Greenfield, Kaplan and Ware (1985) and, Thompson, Nanni and Schwankovsky (1991) (described in Chapter 12). The present study differs from previous work in this field by identifying three components of the multi-faceted patient-focused interventions described in Chapter 12, and assessing the impact of these on patient question asking, satisfaction with the consultation, and health status. The three components for the current study are: permission to ask questions, identifying questions and, identifying and rehearsing questions.

The objective of each of the interventions was to encourage patients to ask questions during their medical consultations. Each intervention was designed to overcome some of the barriers that were hypothesized to prevent patients from asking questions.

The study was conducted amongst patients attending a diabetic clinic. A full description of the experimental procedure is presented below. Chapter 14 presents and discusses the results of the study.

The aims of the study were (a) to evaluate the impact upon doctor and patient satisfaction of three ways of increasing patient question-asking in outpatient consultations and (b) to investigate whether increased satisfaction was associated with increased diabetic control.

Each intervention addressed one of the three barriers to asking questions mentioned above. The letter from the doctor was designed to address the belief in the acceptability of asking questions (cognitive barrier). The intervention where patients identified their questions before the consultation was designed to address the ability to recall questions (cognitive barrier) and the intervention where patients identified and rehearsed their questions was designed to increase the perceived ability to recall questions (cognitive barrier), the perceived ability to ask questions (cognitive barrier) and to reduce the feeling of embarrassment engendered by asking questions (affective barrier).

13.2. Hypotheses

Six hypotheses were tested in the study. Two predictions were also made as it was not possible to hypothesise the direction of the influence between the variables.

Hypothesis 1: Patients in the intervention groups will ask more questions than those in the control and attention control groups.

Hypothesis 2: As a function of the number of barriers being addressed by each intervention participants in the identify and rehearse questions group will ask more questions than those in either the letter or identify questions groups.

All the interventions were designed to encourage patients to ask questions which will make them more active in the consultation. Doctors may not be prepared for or comfortable with patients who take an active role and change the expected interaction pattern. Expected patient behaviour during medical consultations is patient passivity: increased participation by patients may be a new behaviour and this change may be perceived by doctors as due to anxiety or anger in the patient (Roter, 1977). There is evidence to suggest that doctors may be less satisfied with consultations when patients ask more questions or take a more active role in the consultation (see Chapter 8).

Hypothesis 3: If the interventions are successful in increasing the number of questions asked by patients, doctors will perceive those patients as being more angry and doctors themselves will be less satisfied with the consultation they have with those patients.

Hypothesis 4: Doctors will perceive patients who ask more questions as being more anxious.

Hypothesis 5: Doctors who state that their expectations of the consultation were

met or that the consultation was better than expected, will be more satisfied than those who report that the consultation was worse than expected.

Perceived self-efficacy influences what people do, their motivation, their perseverance in the face of difficulty, the self-enhancing or self-hindering nature of their thought patterns and their vulnerability to stress and depression. People with stronger self-efficacy beliefs set higher goals for themselves and are more determined to engage in the intended behaviour (Bandura and Wood, 1989, Locke et al, 1984). Perceived self-efficacy may mediate the relationship between psychosocial factors, such as stress, and health status.

Individuals who believe they do not posses the resources to perform a specific behaviour are unlikely to develop a strong intention to engage in it, even if they hold favourable attitudes towards it, and expect that significant others would approve of their performing the behaviour.

Hypothesis 6: As an independent variable, self-efficacy in question-asking will predict the number of questions asked in the consultation. As a dependent variable it is hypothesised that self-efficacy in question asking will be increased by interventions two and three.

Two predictions will also be examined:

1. Patient question asking will influence doctors' perception of patient comprehension.

Perception of patient comprehension was assessed as it is not known if patients who ask questions are perceived as understanding more or less than patients who do not ask questions. This, in turn, may affect doctor satisfaction.

2. Increased question asking by patients will influence their level of satisfaction with the consultation. It is not possible to predict the direction of the relationship between question asking and satisfaction as patients are being encouraged to play an active role that they may not be accustomed to. Patients who ask questions may be more anxious and less satisfied (Roter, 1977). An alternative outcome is also possible. Patients frequently complain about not getting the information they require. If patients ask questions they will increase the amount of information they receive; this may make them anxious, but they may be more satisfied.

13.3 Method

13.3.1 Design

Patients were randomly allocated to one of five conditions to receive either one of three interventions or to serve as an attention control group to counteract any nonspecific effects of attention (the Hawthorne effect). The fifth group of patients acted as a control for the possible effects of non-experimental influences such as information from the mass media or encouragement by diabetic nurses to ask questions (no treatment control).

For patients, assessment of the independent variables was made prior to the intervention (T1). Assessments of dependent variables were made at three time points: immediately after the intervention (T2), immediately after the consultation (T3), and three months after the index appointment (T4). Assessments at T2 are used to determine the immediate effects of the intervention. Assessments at T3 are used to examine the impact of the consultation, and assessments at T4 to establish any longer term effects of the interventions. Patients in the no treatment control group completed the same

questionnaires as patients in the other groups but only at times one, three and four (see Table 13.1).

Doctors completed two questionnaires, one prior to the commencement of data collection (T0) and one immediately after the consultation (T3). Copies of the questionnaires are in Appendix 12.

Table 13.1 Timing of completion of questionnaires by participants

	T0	T1	Intervention	T2	T3	T4
Intervention Groups	-	X		X	X	X
Attention control	-	X		X	X	X
No treatment Control	-	X		-	X	X
Doctors	X	-		-	X	-

Analysis

The effects of the interventions were assessed by comparing the number of questions asked by patients in the different intervention groups. If there was any change in patient behaviour possible mediators of change would be assessed by examining the covariation between the number of questions asked by patients and their anxiety level and perceived

self-efficacy in asking questions. The immediate effect of question asking on patients was assessed by examining the relationship between the number of questions asked and patient satisfaction, perceived self-efficacy with regard to question asking, and anxiety. In the longer term, the relationship between satisfaction, blood glucose control and perceived health status is examined.

The immediate effect of question asking on doctors was assessed by examining the relationship between the number of questions asked and doctor satisfaction with the consultation. The duration of the interview was recorded. The data on number of questions asked were collected from the transcriptions that were made from the audio-taped consultations.

13.3.2 Participants

Those eligible for participation were patients fluent in English who were attending the diabetic clinic at a London teaching hospital between August 1994 and the end of March 1995. All doctors working in the diabetic clinic during this time were eligible for inclusion in the study.

13.3.2.1 Study power calculations

Roter (1977) found a significant difference between groups when the experimental group asked 0.7 more questions than the placebo group. Thompson, Nanni and Schwankovsky (1990) reported a significant result when the difference in the number of questions asked between experimental and control groups was one. In practical terms, although small, a difference of one question would seem to be an important effect. The mean effect size for

the work reported by Roter (1977), Greenfield, Kaplan and Ware (1985) and, Thompson, Nanni and Schwankovsky (1991) was 39%. Given the design of the current study, the data were analysed using analysis of variance. Tables published by Cohen (1992) show that an effect size of 40% is considered large for analysis of variance statistics. Cohen recommends that: in a study with a power level of 0.80 and a significance criterion of 0.05 each group should have 16 participants. This required complete data on 80 patients.

With regard to doctors, the number of participants is fixed by the number of doctors working in the clinic. While there are some permanent members of staff this number is supplement by locums and junior doctors working through their rotations.

13.3.3 The interventions

13.3.3.1 Intervention 1: Written message

Patients were given a written message by the researcher which was signed by their doctor aimed at encouraging them to ask questions.

> "Good health care needs the doctor and patient to work well together. Most people have some questions about their health or their treatment. If you have any questions, please feel free to ask them when you see me today."
>
> (Amended from Thompson, Nanni and Schwankovsky (1990))

13.3.3.2 Intervention 2: Question Identification

Before their appointment with the doctor, patients spent five to ten minutes with a researcher. During this time patients were helped to identify at least three questions that

they wanted to ask the doctor (see Appendix 13).

13.3.3.3 Intervention 3: Question Identification and Rehearsal

As for Intervention 2, patients spent five to ten minutes with the researcher before their appointment with the doctor during which time they were helped to identify at least three questions that they would like to ask the doctor. In addition these patients were encouraged to rehearse their questions out loud (see Appendix 14).

13.3.3.4 Attention Control Group

This group of patients spent the same amount of time with the researcher. The researcher discussed with these patients the layout of the hospital, the appointment system and routines of the diabetic clinic.

13.3.3.5 No Treatment Control Group

This group provided baseline data and data for comparisons immediately after the consultation and three months later.

13.3.4 Equipment

Consultations were recorded in diabetic clinics using Sony professional audiotape recorders, with an external microphone. Fourteen of the 108 recordings of consultations were excluded from analysis due to poor quality of recording or technical error.

13.3.5 Measures

The data in this research project comprised self-report data collected from patients and

doctors, measures of blood glucose control obtained in the diabetic clinic and recorded in patient notes. A measure of the number of questions asked by each patient was assessed from transcribed audiotapes of consultations. These are now described in detail.

13.3.5.1 Measures completed by patients:

a) State anxiety. STAI-6, a short form of Spielberger's State Anxiety Inventory (Marteau and Bekker, 1992).

b) Self-efficacy in asking questions.

c) Health status.

d) Patient satisfaction with the consultation.

e) Patient satisfaction with information given during the consultation.

f) Demographic data.

13.3.5.2 Measures completed by doctors:

a) Doctors' perceptions of patient anxiety, anger, comprehension, adherence, and involvement in the consultation.

b) Fulfilment of expectations.

c) Satisfaction with the consultation.

d) Demographic data.

13.3.5.3 Additional measures:

a) Total consultation time.

b) Questions asked by patients.

These measures and the rationale for their use are described below.

13.3.5.1 Measures completed by patients

13.3.5.1.a State anxiety (STAI-6)

The STAI-6 (see Table 13.2) is a six-item short form of the state scale of Spielberger's

Table 13.2 STAI-6: Measure of state anxiety

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not at All	Somewhat	Moderately	Very Much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Please make sure you have answered **all** the questions.

State Trait Anxiety Inventory developed by Marteau and Bekker (1992), assessing how

anxious an individual feels right now. The questionnaire contains equal numbers of anxiety-present and anxiety-absent items. The STAI-6 has acceptable reliability and produces scores that are similar to those produced with the full-form across subject groups manifesting normal and raised levels of anxiety.

The present study assessed state anxiety at four time points, three of these within a relatively short space of time (one to two hours). Hence the STAI-6 seemed the appropriate measure to use. It takes less time to complete than the 20 item version and therefore it is likely to maximise response rates, and minimise response errors and unanswered items.

High levels of anxiety may be linked to asking fewer questions: anxiety interferes with information processing and patients may forget the questions they want to ask. Spielberger's State-Trait Anxiety Inventory, (Spielberger, Gorsuch & Lushene, 1970) is a reliable, sensitive and well-validated measure of anxiety. It is one of the most frequently used measures of anxiety in applied psychological research and as such allows researchers to compare results across studies and with a normal population.

The STAI-6 assesses how anxious an individual feels right now. The study also required anxiety to be assessed during the consultation and therefore patients were asked, immediately after the consultation, "How anxious were you during the consultation?" The response scale for this question was an eight point visual analogue scale labelled at either end: zero - not at all anxious, and seven - extremely anxious.

13.3.5.1.b Self-efficacy in asking questions

This questionnaire was designed to measure and compare patients' perceived ability to ask questions of two different health professionals. The questionnaire (see Table 13.3) described two health-related situations in which patients might find themselves. Patients responded to the question "How confident are you that you can ask questions in the following situations?" on a scale of 0 (not at all confident) to 100 (extremely confident).

There is as yet no tradition in the measurement of self-efficacy. Bandura (1986) has argued that self efficacy expectations vary along dimensions of magnitude, generality and strength. The magnitude or level of efficacy refers to one's estimate of one's best possible performance. The strength of certainty of efficacy refers to one's confidence in this estimate, and the generality of efficacy refers to more or less specific or global situations where the behaviour could be performed successfully.

This implies that self-efficacy estimates must be viewed as situation dependent. The perception of participants' ability to perform a certain behaviour is determined, and varies, by the perceived task difficulty and the situation. Measurement of perceived difficulty does not necessarily imply an estimation of ability. A person can perceive a behaviour in a certain situation as very difficult but also as something that can be done. Measuring ability in relation to situational aspects, however, is likely to include perceived difficulty levels of both situation and behaviour. A person asked to rate his or her confidence in being able to perform a certain behaviour in a certain situation, will probably weigh ability against the difficulty and situation difficulty. This leads to the conclusion that instruments to measure perceived ability ("Do you think you are able to ...") assess both the

dimensions of strength and magnitude. Including a sample of relevant situations provides an assessment of the dimension generality (Schwarzer, 1992, p247).

The intervention study concentrated on the strength of self-efficacy in question asking given that this aspect of self-efficacy has turned out to be the most important aspect with regard to encouraging behaviour change (Schwarzer, 1992).

Table 13.3 Self-efficacy in question asking

The following statements describe various situations in which you may wish to ask questions. Under the column marked **how confident** please indicate how confident you are that you could ask questions in that situation. If you do not think you could ask questions in that situation put a 0 in the column; if you are extremely confident that you could ask questions in that particular situation write 100 in the column. If you are not sure then you can write any other number, the higher the number, the more confident you feel.

Scale for rating confidence

0	10	20	30	40	50	60	70	80	90	100
Not at all confident				Moderately Confident						Extremely Confident

That I can ask questions in a particular situation.

How confident are you that you can ask questions Of the following?	**How confident**
1. A hospital doctor you have **not** met before?	.....
2. A hospital doctor you have met before?	.....

13.3.5.1.c Health Status

Health status was assessed using both self-report and physical indices. The self-report measure of health status asked patients to describe their perception of their health by answering the question, “In general would you say your health is:- poor, fair, good, excellent"? This question was taken from the SF-36 Health Status Questionnaire (Ware and Sherbourne, 1992, Stewart and Ware, 1992, Ware, 1993).

The physical measure of health status was glycolated haemoglobin (HbA1c) which is a reliable test of the average blood glucose level over the previous two to three months. People without diabetes have an HbA1c level in the range of 3 to 5.5%. People with diabetes have an HbA1c level in the range of 2 to 22%. A lower value describes better control, unless it is lower than the normal range which can indicate that a patient is taking too much insulin and running blood sugars that are too low. The HbA1c measure of glucose control was used to examine how well patients had controlled their diabetes between the time of entering the study and the time of the follow-up questionnaire, 12 weeks later. This information was collected from patient notes at T1 and T4.

Perceived level of diabetic control was also assessed. Three months after the index visit patients were asked “How well controlled do you feel your diabetes has been recently?” Patients responded on an eight point scale from zero - very poorly controlled to seven - very well controlled.

Both self-report and physical indices were included as patients may be satisfied with inadequate health care or suboptimal health outcomes, as a function of their own values,

expectations and knowledge. While there is evidence that patient satisfaction with care provided influences behaviour (Simpson et al , 1991) little is known about any effect this may have on health outcome. In chronic conditions, even strict adherence to a medical treatment regime does not guarantee a good health outcome for the patient. Therefore, a patient with good glucose control may not report feeling very healthy; alternatively someone with poor control may perceive themselves as healthy.

13.3.5.1.d Patient satisfaction with the consultation.

This dependent variable was assessed by a single-item measure "Overall, how satisfied are you with the consultation?" Participants answered on an eight-point scale from zero-not at all satisfied to seven-extremely satisfied. This scale has test-retest reliability of 0.86 and there is evidence of concurrent and predictive validity (see Chapter 6).

13.3.5.1.e Patient satisfaction with information given

This single item measure asked patients "How satisfied are you with the information you received during the consultation?" Patients responded on an eight point scale from zero - not at all satisfied to seven - extremely satisfied.

13.3.5.1.f Demographic data

Information was obtained from participants and their medical notes on their age, gender, ethnicity, socio-economic status (assessed from current or most recent occupation), highest qualification obtained, years since diabetes was first diagnosed and, number of previous visits to the clinic.

13.3.5.2 Measures completed by doctors

13.3.5.2a Doctors' perceptions of patient anxiety, anger, comprehension, adherence, and involvement in the consultation

Doctors were asked to indicate on a series of eight-point scales how anxious, how angry, how adherent and how involved the patient seemed to be during the consultation. These single-item measures were all answered on eight-point scales from zero - not at all to seven - extremely. Doctors responded to the question "How much of what you said do you think this patient understood?" on a five-point scale from one-nothing at all to five - absolutely everything.

13.3.5.2.b Fulfilment of Expectations

Doctors replied to the question "Overall would you say that the consultation was as you expected?" Participants could respond by ticking, "No, it was better; Yes; No, it was worse".

13.3.5.2.c Doctor satisfaction with the consultation

This was assessed on an eight-point scale zero - not at all satisfied to seven- extremely satisfied.

13.3.5.2.d Demographic data

The following demographic data were collected from doctors: age, gender, qualifications, the year when they qualified and the number of years they had worked in a diabetic clinic.

13.3.5.3 Additional measures

13.3.5.3.a Total consultation time

Total consultation time was determined from the audiotape recordings measuring the time from the first word the doctor or patient uttered until the last word. Telephone calls unrelated to the patient's clinic visit or other interruptions, such as the doctor leaving the room, were excluded from the encounter time.

13.3.5.3b Questions asked by patients

Questions asked by patients were documented in two ways: the total number of questions asked and how the question had originated. The number of questions asked by the patient was counted from the transcripts of the audio-tape recordings. These questions were then classified as belonging to one of four categories depending on how the question had originated.

Category one: Direct question initiated by the patient. This category contains questions that are not related to anything that has been said in the consultation up to the point that it is asked (see example below):

Dr: ...it's not there but I will do hour sugar now, I will do, check your sugar.

Pt: When I wake up in the morning it looks like my urine.

Dr: Yes, I have the result. I will let you know all about that after.

Pt: Oh Dr (name) I think some tablet is coming out for the diabetes because I was reading in the newspaper, is that true?

In the example above the doctor and patient have been discussing blood tests, what type and when they were last done. The patient's question on the final line above is not related to blood tests and introduced a new topic of conversation.

The three categories of indirect questions are very similar to each other. All three categories of indirect question are bids for clarification by patients.

Category two: Indirect question related to something the patient had mentioned earlier.

This category includes requests for clarification and/or more detail that relates to something the patient has already said or asked (see example below):

Line 1 Pt: What was the blood pressure doctor?

Line 2 Dr: It was about 160 over 90.

Line 3 Pt: So it was the same again?

Line 4 Dr: Yeah

Line 5 Pt: What, what kind of situation is that?

Line 6 Dr: I mean that's

Line 7 Pt: Is it outside of the grey area?

In the first line of this example the patient changes the topic of the consultation and this question is coded as direct. The questions on lines three, five and seven are all related to that initial change in topic and are coded as indirect questions related to something the patient has already mentioned.

Category three: Indirect question related to something the doctor had mentioned earlier.

This category includes requests for clarification and/or more detail that relate to something the doctor has already said (see example below):

Dr:.. Is your hear beat regular?

Pt: No, I've got an irregular heart beat.

Dr: It is not regular. Yes. So you know about heartbeats.

Pt: Yes

Dr: Have you tried other tablets for your diabetes?

Pt: Not since I had the operation.

Dr: I would like to increase the tablets.

Pt: Increase the tablets, why?

The question on the final line above is from the patient and clearly related to a topic that the doctor has introduced to the consultation that has not been discussed prior to this point in time.

Category four: Iindirect question related to a topic both patient and doctor have discussed. This category includes questions that arise as part of a continuing dialogue between doctor and patient. It does not raise a new topic.

Pt: .....I remembered to take it and then I had just a snack afterwards you know, something to

Dr: In your case I don't think there's anything to worry about but as long as you take your insulin. If you find that it's really very difficult to have a structured lifestyle, I would actually advice the three the three short acting the four, the pregnancy type regime.

Pt: If I take it within an hour, say I take it between seven and eight every night, is that you know, structured enough?

Here the patient's question is clearly related to the topic that both patient and doctor have been discussing.

The Kappa coefficient for where the question had originated was determined using ratings

of 20 transcripts made independently by two raters, blind to the group to which the patient had been allocated (Kappa = 0.66). For the purposes of analysis the categories were collapsed into two: direct and indirect questions.

Two further variables related to question asking were included in the study. Immediately after the intervention patients were asked "How many questions do you want to ask during the consultation?" Immediately after the consultation patients were asked "How many questions do you think you asked?"

13.3.6 Procedure

Ethical committee approval for the study was sought and granted.

Doctors in the diabetic clinic were approached and their participation in the study sought. When a doctor agreed to take part they were given the initial questionnaire to complete.

Patients were approached and asked to participate in the study after they had booked in for their outpatient appointment at the diabetic clinic. They were informed that a study was being carried out looking at the information patients receive during their consultation with the doctor. Patients were informed that they would be randomly allocated to one of five groups and that they could not choose which group they would be in. The patients were also informed that it was necessary to audio tape record the consultation with the doctor and that if they did not wish this to be done then they should not agree to participate in the study.

If patients agreed to take part they were given the first questionnaire to complete. Patients' notes were then checked for their current HbA1c results. After completion of the first questionnaire patients in the intervention groups and attention control group spent five minutes in a separate room with the researcher receiving their intervention. At the end of the intervention and before they saw the doctor, the patient completed the second questionnaire. When the patient was called in to the consulting room the tape recorder was carried in by the researcher and turned on. The researcher then left the room. When the consultation was finished the researcher returned to turn off the tape recorder and give the post-consultation questionnaire to the doctor. When the consultation with the doctor ended, patients were given their third questionnaire and encouraged to complete it before going home. If they were unable to do this, they were given a stamped-addressed envelope to return the questionnaire by post. The fourth questionnaire was sent to patients 12 weeks after their index appointment, to be completed before their next clinic appointment when their HbA1c was again assessed.

To minimise the possibility of doctors in the clinic identifying which patients had received which intervention, the doctors were asked to complete the post-consultation questionnaire for every patient who agreed to take part in the study, regardless of which intervention they were allocated to. This questionnaire was handed to the doctor to complete when the tape-recording was collected.

13.4 Confidentiality

Identifying information for the patient and doctor was removed from the tape transcriptions. Both patients and doctors were allocated study numbers to identify tape

transcriptions. All participants were assured that it would not be possible to identify from whom the data were collected, either by questionnaire or by audio-tape.

13.5 Analyses

The study was explanatory as opposed to pragmatic in design (Schwartz and Lellouch, 1967). This means that the main analyses were conducted on those who agreed to participate. The data were checked for assumptions of normality prior to analysis. The three main outcome measures, number of questions asked, patient satisfaction and doctor satisfaction as well as most of the other measures were skewed. On discussing the level of skewness with a statistician it was agreed that the most appropriate analyses would involve nonparametric statistics. Spearman's correlation coefficients were used to identify bivariate associations between ordinal variables, and the Mann-Whitney U test and the Kruskal Wallis test for independent samples were used, as appropriate. For some data the mean scores are informative and aid comprehension and these are presented, where appropriate. Logistic regression analyses were run on the main outcome measures of question asking and patient satisfaction.

Each doctor in the study saw a number of patients. The data were therefore not independent and so three types of analyses were performed. To examine associations between doctor variables and doctor satisfaction, each record was weighted by the number of doctors for whom there were data on the dependent variable (doctor satisfaction) divided by the number of patients on whom that variable had been estimated by the doctors. This weighting makes the degrees of freedom in the regression equation appropriate (the sum of residual and regression will be number of doctors minus one).

The second analysis concerned differences between consultations within doctors. The correlation between the two measures was calculated separately for each doctor (and this is only possible if there are at least two measures for each doctor). The beta-coefficient from each valid analysis was then entered into a one-sample t-test to examine whether the mean beta coefficient was significantly different from zero.

The third analysis examined whether doctors who reported high levels on one variable also reported high levels on another variable. For this analysis, pairs of values were required, to give an average value for each variable. This had to be weighted because some doctors had seen more patients than others. A regression analysis was then carried out on these values.

The analyses were run on a PC using SPSS for Windows.

The results of the study, together with the discussion of the results follows in Chapter 14.

Chapter 14

Empowering patients: an experimental study to evaluate the effectiveness of three patient-focused interventions - results

14.1 Introduction

The results of the study described in Chapter 13 are divided into nine sections. Section 14.2 gives details about study participation and explores the baseline data for differences between groups. Section 14.3 describes the distribution of responses on the main outcome variables and Section 14.4 describes the results from the independent variables. Section 14.5 presents the results from testing the hypotheses detailed in Chapter 13 and Section 14.6 presents some additional results. Section 14.7 provides the results of the logistic regression analyses, and Section 14.8 summarises the main findings. Section 14.9 discusses the results and the final Section, 14.10, presents some conclusions.

14.2 Results: Study participation and baseline data

14.2.1 Study participation: patients

One hundred and fifty patients eligible for inclusion in the study presented at the diabetic clinic between August 1994 and March 1995. Of the 150 who were approached 35 refused to participate. Twenty simply refused and 15 gave a variety of reasons for not wishing to participate (see Table 14.1). Of the 115 patients who agreed to participate in the study, seven were called in for their consultations prior to completion of the first questionnaire and were therefore withdrawn from the study.

Table 14.1 Reasons for not wishing to participate in the study (n)

Reason for not wishing to participate	n
Involved in another research project	4
Not enough time	4
Concerned about confidentiality	2
Not feeling well	2
Did not want to be tape-recorded	1
Did not want to have any blood tests	1
Believed research was a waste of time	1

The remaining 108 participants completed the first questionnaire and received their allocated intervention. Due to the prospective design of the study, the four data collection points spread over three months, together with technical difficulties of tape recording, data are missing for some participants (see Table 14.2). There was no difference in response rates between experimental groups.

Table 14.2 Data Attrition: Number(%) of questionnaires returned at each phase of the study

Phase of study	Number (%) of questionnaires returned
Time 1 (Prior to intervention)	108/108 (100%)
Time 2 (Post intervention: not expected from group 5)	77/79 (97%)
Time 3 (Immediately after consultation)	105/108 (97%) 94/108 audiotapes (87%) 101/108 questionnaires from doctors (93%)
Time 4 (Three months later)	82/108 (76%)

Given that returned questionnaires are not always fully completed by participants it was decided that data analysis would be conducted on the 108 patients who completed the first questionnaire and were allocated to a group. The sample size for the analyses therefore varies. There were no significant differences between the participants who completed the fourth questionnaire and those who did not on any of the baseline variables or on the variables assessed immediately after the intervention and after the consultation (see Table 14.3).

Table 14.3 Comparisons between participants who returned the final questionnaire and participants who did not

Variable		**Completed T4 n = 82**	**Did not complete T4 n = 26**		
	T-tests	$\bar{x}$	$\bar{x}$	**t**	**df**
Age		46.8	44.4	0.65	43.6
HbA1c		8.0	7.3	2.03	50.1
Length of consultation		17.9	17.1	0.41	30.6
State Anxiety T1		35.5	36.8	-0.38	33.6
State Anxiety T2		33.2	30.0	1.14	39.4
State Anxiety T3		33.5	32.2	0.43	36.6
Total number of questions asked		9.1	9.6	-0.29	31.9
	Mann-Whitney	**$\bar{x}$ Rank**	**$\bar{x}$ Rank**	**U**	
Number of years with diabetes		54.3	52.9	998.0	
Number of previous visits		51.5	49.5	887.0	

Table 14.3 continued

Variable		Completed T4 n = 82	Did not complete T4 n = 26	
	Mann-Whitney	$\bar{x}$ **Rank**	$\bar{x}$ **Rank**	**U**
Confidence in asking questions of:				
Known hospital doctor (T1)		51.4	60.1	868.5
Unknown hospital doctor (T1)		54.1	53.8	1049.0
Known hospital doctor (T2)		36.3	40.8	509.5
Unknown hospital doctor (T2)		37.3	40.0	509.5
Known hospital doctor (T3)		47.6	55.9	695.5
Unknown hospital doctor (T3)		48.5	55.2	733.5
Perception of control over diabetes		49.9	51.4	725.5
Number of questions want to ask		42.9	43.4	571.0
	Chi-square	**df**		
Perceived health status	2.0	3		
Ethnicity	0.9	3		
Socio-economic status	1.4	4		
Highest qualification	5.5	4		
Gender	0.1	1		
Group allocation	1.1	4		

Of the 108 participants who completed their first questionnaires, 22 were allocated to Group 1 - letter from the doctor; 24 were allocated to Group 2 - identifying questions; Group 3 - identifying and rehearsing questions had 14 participants allocated to it; Group 4 - attention control contained 19 participants and Group 5 - controls had 29 participants. Random allocation to groups should have ensured that there were equal numbers of participants in each group. Working in an outpatient clinic it was essential not to disrupt the flow of patients into their consultations. On occasion, participants allocated to receive an intervention were called into their consultations as they completed their first questionnaire, before receiving their intervention, these patients were therefore reallocated to group 5 (control group).

The mean age of participants was 46.2 (sd=16.3) with a range of 17 to 78. Forty-five women and 63 men agreed to participate.

14.2.2 Study participation: doctors

The participants had consultations with 12 doctors (seven male, five female) all of whom agreed to participate in the study. The number of patients seen by each doctor ranged from one to 32. While the doctors consistently completed the questionnaires related to the consultations, only five completed questionnaires concerning demographic data. Three of the doctors appeared in the clinic for what subsequently turned out to be a very brief period of time; and four doctors lost or repeatedly forgot to return their questionnaires.

14.2.3 Baseline measures

To check that randomization had been successful, baseline measures for the groups were compared. No differences were found (see Tables 14.4(mean ranks) and 14.4a (mean scores)).

Table 14.4 Comparisons between intervention and control groups on baseline measures (mean ranks)

Variable		**Intervention Groups n = 60**	**Control Groups n = 48**		
	T-tests	$\bar{x}$	$\bar{x}$	**t**	**df**
Age		46.9	45.3	0.51	101.5
HbA1c		7.8	7.8	-0.04	94.2
	Mann-Whitney	$\bar{x}$ **Rank**	$\bar{x}$ **Rank**	**U**	
Number of years with diabetes		56.9	50.3	1235.5	
Number of previous visits		55.0	46.0	1035.0	
Confidence in asking questions of: Known hospital doctor		55.2	52.5	1342.0	
Unknown hospital doctor		57.6	48.6	1155.0	
Perception of control over diabetes		47.8	48.3	1080 0	
Number of questions want to ask		42.8	43.3	856.5	
	Chi-square	**df**			
Perceived health status	4.2	3			
Ethnicity	0.3	4			
Socio-economic status	5.2	3			
Highest qualification	2.7	4			

Table 14.4a Comparisons between intervention and control groups on baseline measures (mean scores)

Variable		Intervention Groups n = 60	Control Groups n = 48		
	T-tests	$\bar{x}$	$\bar{x}$	**t**	**df**
Age		46.9	45.3	0.51	101.5
HbA1c		7.8	7.8	-0.04	94.2
Number of years with diabetes		10.4	8.1	1.3	103.3
Number of previous visits		14.7	8.4	2.3	93.1
Confidence in asking questions of: Known hospital doctor		 84.2	 78.7	 1.1	99.5
Unknown hospital doctor		67.8	65.6	0.36	101.8
Perception of control over diabetes		73.7	76.0	-0.54	91.9
Number of questions want to ask		2.2	2.0	0.51	82.9
Anxiety		34.6	37.4	-0.99	88.3

14.3 Descriptive data for the main outcome variables

14.3.1 Number of questions asked

The mean number of questions asked across all groups was 9.2 (sd 6.5) with a range from zero to 34. The mean number of direct questions asked was 3.4 (sd 2.7) range zero to 12; the mean number of indirect questions asked was 5.8 (sd 4.8) with a range of zero to 22.

14.3.2 Patient satisfaction with the consultation

Patient satisfaction with the consultation was assessed immediately after the consultation and again three months later. Immediately after the consultation patients reported high levels of satisfaction with their consultations. The mean level of satisfaction was 5.9 (sd 1.1) with a range of two to seven, where zero represents extremely dissatisfied and seven represents extremely satisfied. Three months later, using the same scale, patients again reported a similarly high level of satisfaction with the consultation. The mean level of satisfaction was 5.2 (sd 1.4) with a range of one to seven.

Participants reported high levels of satisfaction with information received during the consultation. The mean level of satisfaction was 5.9 (sd 1.5) with a range of zero to seven.

14.3.3 Doctor satisfaction with the consultation

The mean level of doctor satisfaction with the consultation was 4.0 (sd 1.6) with a range of zero to seven, where zero represents not at all satisfied and seven represents extremely satisfied.

14.3.4 Health status

Three measures of health status were obtained three months after the index visit: perception of general health, perception of diabetic control, and a measure of blood-glucose levels, glycolated haemoglobin (HbA1c).

14.3.4.1 Self report measures: Perception of general health

Participants described their general health in the following way:

6% perceived their health as poor

32% perceived their health as fair

54% perceived their health as good

8% perceived their health as excellent.

14.3.4.2 Perception of diabetic control

Participants indicated a mean level of diabetic control of 4.8 (sd 1.6) with a range from zero to seven, where zero represents very poorly controlled and 7 represents very well controlled.

14.3.4.3 Glycolated haemoglobin (HbA1c)

The mean level of blood glucose control as measured by HbA1c three months after the consultation was 8.0 (sd 1.5) with a range of 5.3 to 14. The range for a non-diabetic population is between 3 and 5.5%. Negative associations were found between glycolated haemoglobin and perception of general health and perception of diabetic control (see Table 14.5). One-way analysis of variance with a Tukey-B test on HbA1c levels, indicated a significant difference between those who perceived their health as poor and those who perceived their health as excellent ($F(3,59) = 3.4$; $p<0.05$). The patients who perceived their health as poor had a mean HbA1c level of 9.4, patients who perceived their health as excellent had a mean HbA1c level of 7.3.

There was a positive association between the self-reported measures of general health and perception of diabetic control (see Table 14.5 and Figure 14.1). One-way analysis of

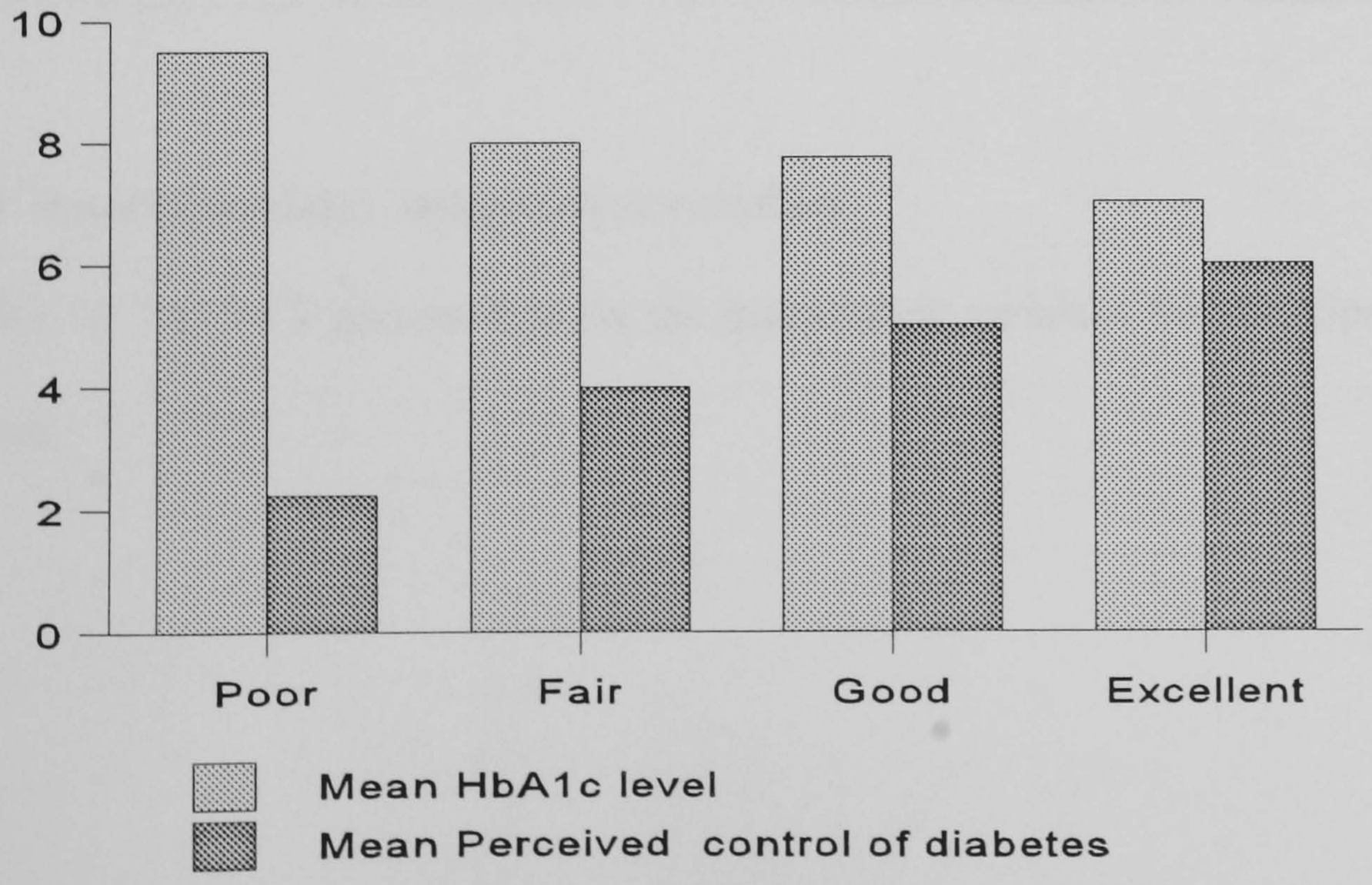
variance with Tukey-B test showed a significant difference between those who perceived their health as good or excellent compared with those who perceived their health as poor or fair ($F(3,77) = 7.6$; $p<0.001$).

Table 14.5 Association (Spearman's rho(n))between perceived general health, perceived diabetic control and glycolated haemoglobin (HbA1c)

	Perceived general health	**Perceived diabetic control**
HbA1c	-0.33 (63)**	-0.38 (63)**
Perceived diabetic control	0.42 (81)***	
** p < 0.01 *** p < 0.001		

Figure 14.1 illustrates the associations between general health, perceived diabetic control and glycolated haemoglobin levels.

Figure 14.1 Health status three months after the index visit



A logistic regression analysis was conducted to examine whether perceived general health was better predicted by perceived control or glycolated haemoglobin. The method of backward entry with the likelihood-ratio criterion was used with an entry level set at 0.05 and the p-value to remove at 0.10.

The dependent variable perception of general health was divided in two with poor and fair in one group (n=31) and good and excellent in the second group (n=51). The independent variables predicted to be associated with the outcome variable were recoded to replace missing values with the mean for that variable. Perception of health as good or excellent was 1.8 times more likely with increased perceived diabetic control (see Table 14.6).

Table 14.6 Logistic model for perception of general health

Independent variable	**B**	**R**	**Exp(B)**	**95% CI**
PERCEPTION OF DIABETIC CONTROL	**0.58****	**0.27**	**1.79**	**0.22, 0.94**
Glycolated Haemoglobin	0.32	0.00	0.73	
** $p < 0.01$				

14.4 Descriptive data: independent variables

Tables 14.7 to 14.9 present data on the independent variables for participants of all groups.

14.4.1 Anxiety

The mean level of anxiety for all participants when they agreed to participate in the study was 35.8 (sd 13.5), where 20 represents the lowest possible score and 80 the maximum (and the norm is 35 (Spielberger, Gorsuch & Lushene, 1970)). Immediately after the intervention the mean anxiety level was 32.3 (sd 11.6). Following the consultation the mean level of anxiety was 33.2 (sd 12.6) and three months later it was 35.5 (sd 13.6). There were no differences across time on level of anxiety. Anxiety experienced during the consultation was examined retrospectively on an eight-point scale from zero - not at all anxious to seven - extremely anxious. The mean level of anxiety during the consultation was 2.4 (sd 2.5) (see Table 14.7).

Table 14.7 Descriptive data: Mean levels of state anxiety before (Time 1) and after the intervention (Time 2), immediately after the consultation (Time 3) and three months after the index visit (Time 4) (n=108)

	Mean[a]	sd	Range
Time 1 (n=94)	35.8	13.5	20 - 80
Time 2 (n=71)	32.4	11.6	20 - 77
Time 3 (n=92)	33.2	12.6	20 - 67
Time 4 (n=56)	35.5	13.6	20 - 73
Anxiety during the consultation	2.4[b]	2.5	0 - 7

[a] State scale of the Spielberger State Trait Anxiety Inventory (range 20 to 80, higher scores denoting more anxiety)
[b] Seven point scale of anxiety (range 1 - 7, higher scores denoting more anxiety)

14.4.2 Self-efficacy

When participants joined the study they reported confidence levels of 66.8 for asking

questions of unknown hospital doctors and 81.7 for known hospital doctors. There was no significant change across time for either variable (see Table 14.8).

Table 14.8 Descriptive data: Mean levels of self efficacy in question asking before (Time 1) and after the intervention (Time 2), immediately after the consultation (Time 3) and three months after the index visit (Time 4)

	Unknown hospital doctors **Mean[a] (sd)**	Known hospital doctors **Mean (sd)**
Time 1 (n=107)	66.8 (30.7)	81.7 (24.3)
Time 2 (n=75)	74.5 (26.7)	86.3 (18.6)
Time 3 (n=99)	70.7 (28.7)	84.4 (20.5)
Time 4 (n=78)	70.8 (26.4)	82.7 (21.9)

[a] 100 point scale of self-efficacy in question asking (range 0 - 100, higher scores denoting higher self-efficacy)

14.4.3 Doctors' perceptions of patients

On scales running from zero (not at all) to seven (extremely) doctors did not perceive patients to be angry, or anxious and patients were perceived to be quite involved in their consultations. Doctors perceived patients to have a reasonable level of comprehension and thought patients would adhere to their advice (See Table 14.9).

Table 14.9 Doctors' perceptions of patients

Variable	Mean	(sd)	Range
How anxious did the patient seem to be?[a] (n=101)	2.2	1.6	0 - 7
How angry did the patient seem to be?[a] (n=101)	1.1	1.5	0 - 7
How involved did the patient seem to be?[a] (n=100)	3.8	1.6	0 - 7
How much of what you said do you think the patient understood?[b] (n=100)	3.3	0.9	1 - 5
How well do you think the patient will adhere to any advice you gave?[a] (n=100)	4.0	1.8	0 - 7

[a] Visual analogue scales (possible range 0 - 7, higher scores denoting higher levels of the variable under consideration).

[b] A scale labelled nothing at all, a little, quite a lot, almost everything, absolutely everything (converted to numerical values from 1 - 5 with higher scores denoting more perceived comprehension).

14.5 Hypothesis Testing

Because of the skewness of the data and the lack of homogeneity of variance in the groups the hypotheses were initially examined using nonparametric statistics. The three intervention groups were compared with the two control groups using the Mann-Whitney U test.

14.5.1 Hypothesis 1: Participants in the intervention groups will ask more questions compared to participants in the control and attention control groups.

This hypothesis was not supported. Mean rank of questions asked for participants in the intervention groups was 51.6, and for the control groups 48.0. No differences between

the groups were found when the questions were subdivided into direct and indirect. Immediately after the intervention, when participants reported how many questions they wanted to ask and immediately after the consultation, when participants reported how many questions they thought they had asked, no differences were found between the groups (see Tables 14.10 (mean ranks) and 14.10a(mean scores)).

Table 14.10 Hypothesis 1: Comparison between intervention and control groups on number of questions asked (mean ranks)

	Intervention Groups (n=55) **Mean rank**	**Control Groups (n=44)** **Mean rank**	**Mann-Whitney U**
Total number of questions asked	51.6	48.0	1122.0
Number of direct questions asked	53.1	46.1	1038.0
Number of indirect questions asked	50.2	49.7	1198.0
How many questions do you want to ask?	33.9	26.5	239.5
How many questions do you think you asked?	48.0	57.1	1075.0

Table 14.10a Hypothesis 1: Comparison between intervention and control groups on number of questions asked (mean scores)

	Intervention Groups (n=55) $\bar{x}$ (sd)	Control Groups (n=44) $\bar{x}$ (sd)	t	df
Total number of questions asked	9.9 (7.6)	8.3 (4.8)	1.2	92.2
Number of direct questions asked	3.7 (2.9)	2.9 (2.4)	1.3	96.8
Number of indirect questions asked	6.1 (5.6)	5.3 (3.7)	0.9	94.5
How many questions do you want to ask?	2.6 (2.3)	1.7 (1.3)	1.9	28.7
How many questions do you think you asked?	2.8 (2.0)	3.5 (2.4)	-1.6	85.1

As participants in the intervention groups did not ask more questions than those in the control groups, it was anticipated that patient and doctor satisfaction would not vary across groups. This was confirmed for the measures of satisfaction taken immediately after the consultation. Three months later, however, participants who had received interventions were more satisfied with their consultations (see Tables 14.11 (mean ranks) and 14.11a (mean scores).

Table 14.11 Satisfaction of patients and doctors in the intervention and control groups (mean ranks)

	Intervention Groups Mean rank (n)	Control Groups Mean rank (n)	Mann-Whitney U
Patients Overall, how satisfied are you with this consultation (T3)	54.2 (58)	51.5 (47)	1291.0
How satisfied are you with the information you received?	55.0 (58)	49.4 (46)	1191.5
Overall, how satisfied were you with this consultation (T4).	47.0 (45)	33.5 (36)	539.5 **
Doctors How satisfied are you with this consultation?	50.2 (54)	50.8 (46)	1228.5
** $p < 0.01$			

Table 14.11a: Satisfaction of patients and doctors in the intervention and control groups (mean scores)

	Intervention Groups $\bar{x}$ (sd) (n)	Control Groups $\bar{x}$ (sd) (n)	t	df
Patients Overall, how satisfied are you with this consultation (T3)	5.9 (1.) (58)	5.8 (1.1) (47)	0.68	91.6
How satisfied are you with the information you received?	6.0 (1.4) (58)	5.7 (1.7) (46)	1.0	85.5
Overall, how satisfied were you with this consultation (T4)	5.6 (1.2) (45)	4.8(1.6) (36)	2.5	64.9*
Doctors How satisfied are you with this consultation?	4.0 (1.4) (54)	4.0 (1.8) (46)	0.01	85.0
* $p < 0.05$				

14.5.2 Hypothesis 2: Participants in the "identify and rehearse questions group" will ask more questions than participants in the other two intervention groups.

The data on question asking were examined between the intervention groups. There was no difference between the three intervention groups on four of the variables concerned with question asking. There was a significant difference between the groups immediately after the intervention when participants were asked "How many questions do you want to ask?" The mean rank for group 1 (letter from doctor) was higher than that for group 3 (identify and rehearse questions) which was higher than that for group 2 (identify questions) (see Tables 14.12(mean ranks) and 14.12a (mean scores)).

Table 14.12 Hypothesis 2: Comparison across intervention groups on the five variables concerned with question asking in the consultation (mean ranks)

	Group 1 (n)	Group 2 (n)	Group 3 (n)	Chi-square	df
Total number of questions asked+	28.0 (19)	24.9 (22)	32.8 (14)	2.1	2
Number of direct questions +	29.1 (19)	26.2 (22)	29.4 (14)	0.5	2
Number of indirect questions +	27.6 (19)	24.4 (22)	34.1 (14)	3.1	2
How many questions do you want to ask?~	33.3 (21)	18.9 (19)	26.6 (12)	9.8	2 **
How many questions do you think you asked?^	32.1 (22)	26.5 (23)	30.3 (15)	1.4	2
** $p < 0.01$					

Group 1: Letter from doctor. Group 2: Identify questions. Group 3: Identify and rehearse questions.

+ = Data collected from transcribed tapes
~ = Data collected from participants immediately after intervention, prior to consultation with the doctor.
^ = Data collected immediately after the consultation.

Table 14.12a Hypothesis 2: Comparison across intervention groups on the five variables concerned with question asking in the consultation (mean scores)

	Group 1 $\bar{x}$ **(sd)** **(n)**	**Group 2** $\bar{x}$ **(sd)** **(n)**	**Group 3** $\bar{x}$ **(sd)** **(n)**	**F**	**df**
Total number of questions asked+	10.0(7.7) (19)	7.7 (4.4) (22)	13.1 (10.3) (14)	2.3	(2,52)
Number of direct questions+	4.1 (3.5) (19)	3. 0 (1.9) (22)	4.1 (3.4) (14)	0.8	(2,52)
Number of indirect questions+	5.9 (5.4) (19)	4.6 (3.8) (22)	8.9 (7.2) (14)	2.8	(2,52)
How many questions do you want to ask?~	3.7 (2.8) (21)	1.5 (1.3) (19)	2.4 (1.6) (12)	5.5	(2,49)**
How many questions do you think you asked?^	3.1 (2.3) (22)	2.4 (2.1) (23)	2.7 (1.3) (13)	0.7	(2,55)
** $p < 0.01$					

Group 1: Letter from doctor. Group 2: Identify questions. Group 3: Identify and rehearse questions.

+ = Data collected from transcribed tapes
~ = Data collected from participants immediately after intervention, prior to consultation with the doctor.
^ = Data collected immediately after the consultation.

14.5.3 Hypothesis 3: If the interventions are successful in increasing the number of questions asked by patients, doctors will perceive patients as being more angry and doctors themselves will be less satisfied with these consultations.

The interventions were not successful in increasing the number of questions asked by patients in their consultation. A further test of this hypothesis was made by assessing the relationships between number of questions asked (total number asked, number of direct questions and number of indirect questions), doctor satisfaction with the consultation, and

doctor perception of patient anger, regardless of group allocation. There were no associations between total number of questions asked, number of direct questions and, number of indirect questions with either doctor satisfaction with the consultation (see Tables 14.13 (within doctor analysis) and 14.13a (between doctors analysis)) or doctor perception of patient anger (see Table 14.14 (within doctor analysis) and 14.14a (between doctors analysis)) for both the within doctors analysis and the between doctors analysis.

Table 14.13 Hypothesis 3: Associations between total number of questions, number of direct questions and number of indirect questions asked by patients and doctor satisfaction with the consultation

	B coefficient		
Doctor id	**Total number of questions**	**Number of direct questions**	**Number of indirect questions**
1	-0.05	0.10	-0.12
2	0.13	0.02	0.20
3	0.33	1.17	0.41
4	0.06	0.13	-.06
5	-0.11	-0.33	-0.10
6	-0.07	-0.15	-0.08
9	-0.05	-0.04	-0.05
11	-0.35	-0.67	-0.67
12	-0.22	-0.29	0.43
13	-0.02	-0.10	0.17
	t=0.21 df =9	t=0.08 df=9	t=0.13 df=9

Table 14.13a Association between doctor satisfaction and patient question asking (between doctors analysis)

Variable	Multiple R	R Square	B	F(df)
Total number of questions asked	0.09	0.01	-0.01	(1,10) = 0.08
Number of direct questions	0.04	0.00	0.02	(1,10) = 0.02
Number of indirect questions	0.16	0.02	-0.04	(1,10) = 0.26

Table 14.14 Hypothesis 3: Associations between total number of questions, number of direct questions and number of indirect questions asked by patients and doctor perception of patient anger

	B coefficient		
Doctor id	**Total number of questions**	**Number of direct questions**	**Number of indirect questions**
1	0.005	0.07	-0.16
2	-0.03	0.09	-0.06
3	-0.39	-2.00	-0.43
4	0.16	-0.10	0.05
5	0.72	0.303	0.04
6	-0.27	-0.07	-0.03
9	0.98	0.02	0.16
11	1.11	2.00	2.00
12	0.60	0.54	-0.67
	t=1.23 df=8	t=0.25 df=8	t=0.33 df =8

Table 14.14a Association between doctor perception of patient anger and patient question asking (between doctors analysis)

Variable	Multiple R	R Square	B	F(df)
Total number of questions asked	0.06	0.00	0.01	(1,10) = 0.04
Number of direct questions	0.17	0.03	-0.06	(1,10) = 0.29
Number of indirect questions	0.16	0.03	0.03	(1,10) = 0.27

14.5.4 Hypothesis four: Doctors will perceive patients who ask more questions to be more anxious.

There was no association between doctor perception of patient anxiety and number of questions asked by patients. (see Tables 14.15 (between doctor analysis) and 14.15a (within doctors analysis)).

Table 14.15 Association between doctor perception of patient anxiety and patient question asking (between doctors analysis)

Variable	Multiple R	R Square	B	F(df)
Total number of questions asked	0.01	0.00	0.00	(1,10) = 0.00
Number of direct questions	0.09	0.01	-0.05	(1,10) = 0.08
Number of indirect questions	0.06	0.00	0.01	(1,10) = 0.03

Table 14.15a Hypothesis 4: Associations between total number of questions, number of direct questions and number of indirect questions asked and doctor perception of patient anxiety

	B coefficient		
Doctor id	**Total number of questions**	**Number of direct questions**	**Number of indirect questions**
1	0.02	-0.08	0.06
2	-0.07	-0.02	-0.09
3	0.06	0.50	0.05
4	0.14	0.37	0.11
5	---	0.08	-0.02
6	-0.001	0.12	-0.05
9	0.09	0.56	0.13
11	0.34	0.50	0.50
12	-0.33	0.07	-0.40
13	-0.55	-0.90	-0.50
	t=0.17 df=8	t=0.54 df=9	t=0.075 df=9

14.5.5 Hypothesis 5: Doctors who state that their expectations of the consultation were met or that the consultation was better than expected will be more satisfied than those who state that their expectations were not met and described the consultation as worse than expected.

In 77 consultations, doctors indicated that the consultations were as they expected, 14 were described as worse than expected, and nine were described as better than expected. Kruskall-Wallis one-way analysis of variance demonstrated that when doctors experienced a consultation as worse than expected they had a lower mean rank of satisfaction with the

consultation than those who reported the consultation as being as expected and the rank for this group was lower than for the group of consultations described as better than expected (see Tables 14.16 (mean ranks) and 14.16a (mean scores)).

Table 14.16 Doctor satisfaction with the consultation in relation to fulfilled expectations (mean ranks)

Group	**Mean Rank**
Consultation described as "better than expected"	65.5
Consultation described as "as expected"	53.2
Consultation described as "worse than expected"	22.7
χ^2 = 16.8 (df 2) p = 0.0002	

Table 14.16a Doctor satisfaction with the consultation in relation to fulfilled expectations (mean scores)

Group	**$\bar{x}$ score (sd)** (n)
Consultation described as "better than expected"	4.8 (2.1) (9)
Consultation described as "as expected"	4.2 (1.5) (76)
Consultation described as "worse than expected"	2.5 (0.8) (14)
F=8.6 (2,96) p < 0.0001	

14.5.6 Hypothesis six: Self-efficacy in question asking will predict the number of questions asked in the consultation.

There was no difference in level of self-efficacy in question asking between the three intervention groups (see Table 14.17).

Table 14.17 Self-efficacy of patients in asking questions of known and unknown hospital doctors across the study period

	Reported Self-efficacy			
	T1 Mean (sd)	**T2 Mean (sd)**	**T3 Mean (sd)**	**T4 Mean (sd)**
Known hospital doctors				
Group 1 (n=22)	84.1 (25.2)	86.4 (20.1)	90.0 (13.3)	93.1 (7.0)
Group 2 (n=22)	79.3 (27.8)	87.6 (15.5)	88.1(19.4)	83.7 (20.9)
Group 3 (n=29)	92.1 (12.5)	88.6 (16.1)	92.9 (13.3)	85.4 (31.6)
Unknown Hospital doctors				
Group 1 (n=22)	65.0 (31.1)	67.7 (24.1)	75.8 (22.8)	76.2 (22.8)
Group 2 (n=23)	68.2 (29.8)	76.8 (24.4)	75.4 (26.5)	66.8 (27.3)
Group 3 (n=29)	71.8 (35.5)	81.1 (28.3)	78.4 (27.2)	78.7 (22.9)

Group 1 - Letter from doctor
Group 2 - Identify questions
Group 3 - Identify and rehearse questions

Table 14.18 shows the associations between self-efficacy in question asking and number of questions asked. There is a consistent positive association between number of direct questions asked and levels of self-efficacy in question asking.

Table 14.18 Associations (Spearman's rho(n)) between self-efficacy in question asking and number of questions asked

	Total number of questions asked	**Number of direct questions**	**Number of indirect questions**
Self efficacy in asking questions of:			
Unknown hospital doctor			
T1	0.26 (98)**	0.25 (98)**	0.17 (98)*
T2	0.14 (68)	0.28 (68)**	0.10 (67)
T3	0.22 (92)**	0.24 (92)**	0.17 (92)
T4	0.07 (73)	0.13 (73)	-0.04 (73)
Known hospital doctor			
T1	0.30 (97)***	0.26 (97)***	0.21 (97)**
T2	0.25 (67)**	0.42 (67)***	0.10 (67)
T3	0.24(91)	0.31 (91)***	0.16 (91)
T4	0.14 (73)	0.24 (73)	0.04 (73)
* p = 0.08 ** p < 0.05 *** p < 0.01			

T1 = At entry to study
T2 = Immediately after intervention
T3 = Immediately after consultation
T4 = Three months after index visit

14.6 Additional results

14.6.1 Doctor perception of patient comprehension and patient question asking.

There was no significant association between doctor perception of patient comprehension and number of questions asked by patients. (See Tables 14.19 (between doctor analysis) and 14.19a (within doctor analysis)).

Table 14.19 Association between doctor perception of patient comprehension and patient question asking (between doctor analysis)

Variable	Multiple R	R Square	B	F(df)
Total number of questions asked	0.16	0.02	0.16	0.26 (1,10)
Number of direct questions	0.27	0.07	0.27	0.80 (1,10)
Number of indirect questions	0.10	0.01	0.98	0.09 (1,10)

Table 14.19a Associations between total number of questions, number of direct questions and number of indirect questions asked and doctor perception of patient comprehension (within doctor analysis)

	B Coefficient		
Doctor id	**Total number of questions**	**Number of direct questions**	**Number of indirect questions**
1	0.05	0.11	0.04
2	0.13	0.19	0.16
3	0.002	-0.17	0.02
4	-0.02	0.11	-0.06
5	0.05	-0;03	0.11
6	0.01	0.03	0.02
9	-0.10	-0.13	-0.09
12	0.14	0.04	0.03
13	0.13	0.20	0.17
	t=0.44 df=8	t=1 df-8	t=0.11 df=8

14.6.2 Relationship between questions identified in the intervention and those asked in the consultations

For two of the intervention groups (Group 2, identify questions and Group 3, identify and rehearse questions) it was possible to examine whether the questions that had been identified before the consultation were asked as direct questions in the consultation. Although the task for participants in the intervention groups was different (identify questions versus identify and rehearse questions) the term "identified" is used throughout this section to describe the questions of participants from either group. To conduct the comparison the questions identified by each participant during their intervention and the direct questions identified from the transcripts were listed and examined with regard to content. When the content of a direct question asked in the consultation was similar to that of a question identified in the intervention the question was coded as having been asked.

Table 14.20 presents the data used to compare the proportions of identified questions which were asked in the two groups and Table 14.20a presents the data comparing the proportions of the total direct questions asked which had been identified within the two groups. Ideally comparing the proportions between two groups one would also want to allow for variation in questions asking between individuals. Some individuals will have a natural tendency to ask more questions than others regardless of which group they are in. Analysis of patient mean scores was not statistically viable as some scores would be based on much larger numbers of identified questions than others. Moreover as no multi level modelling package was available a normal deviate test was used to test for a significant difference between two proportions.

For both analyses there were no significant differences between the two intervention groups. The data in Tables 14.20 and 14.20a show that while both groups asked the majority of the questions identified before the consultations participants in both groups asked a similarly much larger number of questions that had not been identified before their consultations.

Table 14.20 Numbers of matched direct questions that were asked as a proportion of the total number of direct questions identified

	Group 2	Group 3	Totals	Chi-square
Number of identified direct questions that were asked	21 (62%)	22 (79%)	43 (69%)	
Number of identified direct questions that were not asked	13 (38%)	6 (21%)	19 (31%)	
Total number of direct questions identified	34	28	62	2.0 NS

Table 14.20a Numbers of direct questions identified as a proportion of the total number of direct questions asked

	Group 2	Group 3	Totals	Chi-square
Number of identified direct questions that were asked	21 (34%)	22 (39%)	43 (37%)	
Number of unidentified direct questions asked	40 (66%)	34 (61%)	74 (63%)	
Total number of direct questions asked	61	56	117	0.3 NS

The mean number of direct questions asked is lower than the mean presented in Table 14.10a. The difference is due to the number of groups being considered. Table 14.10a includes all three intervention groups; the above Table only includes the groups that identified questions in their intervention.

14.6.2.1 Content of the questions

There are three groups of questions in the consultations: those identified in the interventions and asked, those identified in the intervention and not asked and questions asked in the consultation that were not identified in the intervention. The content of each question was examined. A wide range of topics was covered in both intervention groups although many were just asked about once. Table 14.21 lists the topics most frequently raised by participants and indicates what percentage of the total number of questions for each column were on that topic.

Table 14.21 Content of questions

Topic of Question	Question identified and asked	Question identified and not asked	Question asked but not identified
Group 2			
Treatment	42%	40%	5%
Blood tests	5%	0%	28%
Appointments	0%	0%	23%
Symptoms	26%	20%	8%
Social	0%	0%	8%
Group 3			
Treatment	45%	14%	8%
Blood tests	0%	0%	19%
Appointments	0%	14%	19%
Symptoms	15%	43%	11%
Social	0%	0%	31%

For both intervention groups the topic most frequently identified and asked about was treatment. No other strong patterns could be discerned.

14.6.3 Mediators of patient satisfaction

There was no significant association between number of questions asked by patients and their satisfaction with the consultation either immediately, or three months, after the consultation (see Table 14.22).

Table 14.22 Associations (Spearman's rho (n)) between number of questions asked and patient satisfaction immediately after the consultation (Time 3) and three months later (Time 4)

	Patient satisfaction with the consultation at Time 3	**Patient satisfaction with the consultation at Time 4**
Total Number of questions asked	0.14 (97)	0.01 (75)
Number of direct questions	-0.01 (97)	0.04 (75)
Number of indirect questions	0.19 (97)*	-0.02 (75)
Number of questions patients wanted to ask prior to consultation	0.23 (62)*	0.20 (48)
Number of questions patients thought they had asked	0.14 (100)	0.03 (76)
* a trend, $p < 0.1$		

There was no association between number of questions asked by patients and their levels of anxiety assessed using Spearman's rho (see Table 14.23). When the variable, total number of questions asked, was divided in two at the median, there was a significant difference in anxiety levels between the two groups: patients who asked fewer than eight questions (n=54) reported a higher level of anxiety (mean anxiety (sd) = 2.7(2.5) during the consultation than patients who asked more than eight questions (n=45, mean anxiety(sd) = 1.7 (2.2)).

Table 14.23 Associations (Spearman's rho(n)) between number of questions asked and patient anxiety prior to and during consultations

	Patient anxiety prior to consultation	**Patient anxiety during consultation**
Total number of questions asked	-0.04 (64)	-0.18 (95)
Number of direct questions	-0.11 (64)	-0.16 (95)
Number of indirect questions	-0.02 (64)	-0.15 (95)
Number of questions patients wanted to ask prior to consultation	0.20 (59)	-0.04 (61)
Number of questions patients thought they had asked	0.08 (70)	-0.13 (99)

14.6.4 Participant gender and impact of interventions

To test further the impact of the interventions, each group was divided into male and female participants. Self-efficacy with question asking, questions asked and satisfaction were then examined. Tables 14.24 (male mean ranks), 14.24a (male mean scores), 14.24b (male number of direct questins) and 14.25 (female mean ranks) and 14.25a (female mean scores) present the results of these analyses.

Immediately after the intervention, men receiving the intervention reported lower levels of self-efficacy in asking questions of both known and unknown hospital doctors compared to men in the control group. This effect did not persist and there were no differences between the groups after the consultation. One further difference for men was

that those in the intervention groups thought they had asked significantly fewer questions in the consultation than men in the control groups (see Table 14.24). This perception was false.

Table 14.24 Comparisons between variables for men in control and intervention groups (mean ranks)

	Mean Rank Control Groups	**Mean Rank Intervention Groups**	**Mann-Whitney U**
Variables at Time 1			
Self-efficacy in asking questions of an unknown hospital doctor	34.1	29.5	401.5
Self-efficacy in asking questions of a known hospital doctor	30.8	31.1	455.0
State Anxiety	28.5	27.6	360.0
General Health Rating	34.6	30.0	415.5
Number of questions want to ask	24.1	27.1	268.0
HbA1c level	31.7	30.5	433.0
Variables at Time 2			
Self-efficacy in asking questions of an unknown hospital doctor	32.4	20.7	94.0 **
Self-efficacy in asking questions of a known hospital doctor	28.5	21.2	126.5 ^
Anxiety immediately after intervention	23.2	20.9	142.5

Table 14.24 continued

	Mean Rank Control Groups	**Mean Rank Intervention Groups**	**Mann-Whitney U**
Variables at Time 3			
Self-efficacy in asking questions of an unknown hospital doctor	28.9	29.1	396.5
Self-efficacy in asking quesions of a known hospital doctor	25.7	30.7	318.5
Anxiety immediately after consultation	26.0	27.7	322.5
Anxiety during consultation	33.2	28.4	372.0
How many questions do you think you asked in the consultation	35.1	27.0	322.5*
Satisfaction immediately after the consultation	31.6	30.6	439.5
Variables from Audiotape			
Total number of questions asked	29.2	31.6	410.0
Number of direct questions	26.5	33.7	338.5
Number of indirect questions	31.1	30.0	429.5
Variables at Time 4			
Satisfaction with consultation	20.3	26.3	194.5
HbA1c level	20.7	17.7	140.5
General Health Rating	24.0	24.0	260.5
Doctor satisfaction with the consultation	29.4	28.7	391.0
^ $p = 0.07$ * $p < 0.05$ ** $p < 0.01$			

Time 1 = As patients enrol into study Time 2 = Immediately after intervention
Time 3 = Immediately after consultation Time 4 = Three months after the index visit

Table 14.24a Comparisons between variables for men in control and intervention groups (mean scores)

	Control Groups $\bar{x}$ (sd)	Intervention Groups $\bar{x}$ (sd)	t (df)
Variables at Time 1			
Self-efficacy in asking questions of an unknown hospital doctor	80.4 (24.4)	74.7 (26.0)	-0.88 (57.7)
Self-efficacy in asking questions of a known hospital doctor	86.7 (19.6)	85.6 (22.0)	-0.20 (58.2)
State anxiety	35.1 (11.9)	35.3 (14.3)	0.04 (52.7)
General Health Rating	2.5 (0.9)	2.7 (0.8)	-0.94 (57.9)
Number of questions want to ask	2.3 (2.3)	1.7 (1.3)	1.2 (48.9)
HbA1c level	7.5 (1.2)	7.7 (1.7)	-0.48 (39.6)
Variables at Time 2			
Self-efficacy in asking questions of an unknown hospital doctor	94.5 (9.3)	78.4 (19.6)	-3.71 (36.3)**
Self-efficacy in asking questions of a known hospital doctor	96.4 (8.1)	86.8(18.2)	-2.42 (38.4)*
Anxiety immediately after intervention	31.7 (10.6)	30.1 (10.5)	-0.41 (15.0)
Variables at Time 3			
Self-efficacy in asking questions of an unknown hospital doctor	76.8 (27.6)	79.1 (22.6)	0.34 (45.9)
Self-efficacy in asking questions of a known hospital doctor	82.8 (24.1)	90.3 (14.5)	1.4 (37.5)
Anxiety immediately after consultation	31.8 (10.7)	33.3 (12.2)	0.48 (49.9)
Anxiety during consultation	2.6 (2.6)	2.1 (2.5)	-0.69 (53.6)
How many questions do you think you asked?	4.0 (2.8)	2.8 (2.2)	-1.81 (46.6)^
Satisfaction immediately after the consultation.	5.9 (1.2)	5.9 (1.1)	-0.09 (50.6)

Table 14.24a continued

	Control Groups $\bar{x}$ **(sd)**	**Intervention Groups** $\bar{x}$ **(sd)**	**t (df)**
Variables from Audiotape			
Total number of questions asked	8.4 (4.6)	10.4 (8.3)	1.15 (51.6)
Number of direct questions	2.9 (2.5)	4.1 (3.1)	1.61 (57.9)
Number of indirect questions	5.5 (3.8)	6.2 (6.1)	0.54 (54.6)
Variables at Time 4			
Satisfaction with consultation	4.7 (1.9)	5.6 (1.2)	1.78 (24.9)^
HbA1c level	8.4 (2.1)	7.8 (1.5)	-0.94 (26.1)
General Health Rating	2.6 (0.8)	2.7 (.8)	0.18 (37.5)
Doctor satisfaction with the consultation	3.8 (1.8)	3.7 (1.4)	-0.20 (44.9)
^ a trend $0.05 < p < 0.1$ * $p < 0.05$ ** $p < 0.01$			

To determine whether some effects had been masked by collapsing the groups into two categories, intervention and control, Kruskal Wallis analyses were run on the same variables over all five groups. One variable provided a significant result, number of direct questions asked in the consultation. Male participants in the control group had a significantly lower mean rank compared to participants in all the other groups (see Table 14.24b).

Table 14.24b Male participants: number of direct questions by group

	Intervention Group				
	Letter from Doctor (n = 13)	**Identify questions** (n = 13)	**Identify and Rehearse questions** (n = 7)	**Attention Control** (n = 12)	**Control** (n = 15)
Mean Rank	33.6	30.8	39.3	35.8	19.1
$\chi^2 = 9.9$ (df = 4) $p<0.05$					

For women the impact of the intervention was apparent in their level of self-efficacy in asking questions of known and unknown hospital doctors. Immediately after the intervention, women in the intervention groups reported higher levels of self-efficacy in asking questions of both known and unknown hospital doctors than women in the control groups. This effect persisted after the consultation. Women who received the interventions also reported lower levels of anxiety both immediately after the interventions and the consultation, although not during the consultation itself.

Three months after the index visit, women in the intervention groups reported higher levels of satisfaction with the consultation and higher levels of perception of health. Kruskal Wallis analyses of these variables did not provide any additional results (see Table 14.25 (mean ranks) and 14.25a (mean scores)).

Table 14.25 Comparisons between variables for women in control and intervention groups (mean ranks)

	Mean Rank Control Groups	Mean Rank Intervention Groups	Mann-Whitney U
Variables at Time 1			
Self-efficacy in asking questions of an unknown hospital doctor	20.6	25.1	202.0
Self-efficacy in asking questions of a known hospital doctor	18.7	26.8	161.0*
State Anxiety	23.7	17.1	124.0 ^
General Health Rating	20.7	25.0	204.0
Number of questions want to ask	20.0	15.5	104.5
HbA1c level	22.7	23.2	246.0
Variables at Time 2			
Self-efficacy in asking questions of an unknown hospital doctor	8.7	16.6	31.0 *
Self-efficacy in asking questions of a known hospital doctor	6.3	17.3	17.0 **
Anxiety immediately after intervention	22.7	13.0	22.5 *
Variables at Time 3			
Self-efficacy in asking questions of an unknown hospital doctor	16.4	26.1	118.5**
Self-efficacy in asking questions of a known hospital doctor	16.0	26.5	111.0 **
Anxiety immediately after consultation	26.9	15.3	83.0 **
Anxiety during consultation	23.4	20.7	201.5
How many questions do you think you asked in the consultation	22.4	21.6	219.5
Satisfaction immediately after the consultation	20.5	24.4	199.0

Table 14.25 continued

	Mean Rank Control Groups	Mean Rank Intervention Groups	Mann-Whitney U
Variables from Audiotape			
Total number of questions asked	19.4	20.5	176.5
Number of direct questions	20.0	20.0	187.0
Number of indirect questions	18.9	20.9	168.0
Variables at Time 4			
Satisfaction with consultation	14.2	21.2	85.0 *
HbA1c level	14.7	18.1	101.0
General Health Rating	15.1	21.0	101.5 *
Doctor satisfaction with the consultation	21.7	22.3	224.0
^ $p = 0.07$ * $p < 0.05$ ** $p < 0.01$			

Time 1 = As patients enrol into study
Time 2 = Immediately after intervention
Time 3 = Immediately after consultation
Time 4 = Three months after the index visit

Table 14.25a Comparisons between variables for women in control and intervention groups (mean scores)

	Control Groups $\bar{x}$ (sd)	Intervention Groups $\bar{x}$ (sd)	t (df)
Variables at Time 1			
Self-efficacy in asking questions of an unknown hospital doctor	46.7 (26.5)	57.7 (35.8)	1.2 (41.9)
Self-efficacy in asking questions of a known hospital doctor	68.6 (26.9)	82.3 (27.0)	1.7 (42.2)
State anxiety	40.5 (14.4)	33.7 (13.4)	-1.5 (33.3)
General Health Rating	2.6 (0.7)	2.9 (0.9)	1.3 (42.1)
Number of questions want to ask	2.3 (1.1)	1.9 (1.0)	-1.2 (28.4)
HbA1c level	7.9 (1.4)	8.2 (1.8)	0.6 (42.4)
Variables at Time 2			
Self-efficacy in asking questions of an unknown hospital doctor	38.3 (23.2)	68.3 (31.9)	2.6 (10.6)*
Self-efficacy in asking questions of a known hospital doctor	58.3 (20.4)	88.3 (16.1)	3.3 (6.7)*
Anxiety immediately after intervention	44.4 (7.8))	32.6 (12.9)	-2.8 (13.1)*
Variables at Time 3			
Self-efficacy in asking questions of an unknown hospital doctor	48.0 (29.1)	72.3 (28.3)	2.7 (39.4) **
Self-efficacy in asking questions of a known hospital doctor	71.5 (21.6)	89.5 (17.9)	2.9 (37.0)**
Anxiety immediately after consultation	40.7 (14.5)	28.2 (11.0)	-3.0(31.1)**
Anxiety during consultation	2.7 (2.2)	2.3 (2.5)	-0.5(40.8)
How many questions do you think you asked?	2.8 (1.8)	2.7 (1.8)	-0.2 (39.2)
Satisfaction immediately after the consultation.	5.7 (1.1)	6.0 (0.8)	1.3 (37.6)

Table 14.25a continued

	Control Groups $\bar{x}$ (sd)	Intervention Groups $\bar{x}$ (sd)	t (df)
Variables from Audiotape			
Total number of questions asked	8.2 (5.1)	9.1 (6.4)	0.5 (36.9)
Number of direct questions	3.0 (2.4)	3.0 (2.4)	0.06 (34.8)
Number of indirect questions	5.1 (3.8)	6.1 (4.8)	0.7 (37.0)
Variables at Time 4			
Satisfaction with consultation	4.8 (1.2)	5.6 (1.4)	1.6 (30.1)
HbA1c level	7.6 (1.1)	8.1 (1.3)	1.1 (30.0)
General Health Rating	2.4 (0.6)	2.9 (0.6)	2.1 (33.0)*
Doctor satisfaction with the consultation	4.1 (1.8)	4.3 (1.4)	0.3 (37.1)
* $p < 0.05$ ** $p < 0.01$			

Time 1 = As patients enrol into study
Time 2 = Immediately after intervention
Time 3 = Immediately after consultation
Time 4 = Three months after the index visit

14.7 Logistic regression

It was anticipated that multiple regressions would be conducted to predict the three main outcome variables: total number of questions asked, patient satisfaction and doctor satisfaction. Due to the skewness of the data, logistic regression analyses were performed on total number of questions asked and patient satisfaction. It was not possible to carry out a regression analysis on the data from doctors due to the difficulties mentioned in the analysis section. Strict entry and removal criteria were set for the independent variables.

The entry level was set at 0.05 and the p-value to remove was set at 0.10. The method of entry was backward with the likelihood-ratio criterion.

Each outcome variable was divided in two at the median. The independent variables predicted to be associated with the outcome variables were recoded to replace missing values with the mean for that variable.

14.7.1 Total number of questions asked

Two factors discriminated between participants who asked many questions and those who did not (Table 14.26). The likelihood of asking questions increased with increasing age and decreased with increased anxiety.

Table 14.26 Logistic model for asking questions in the consultation

Independent Variable	B	R	Exp(B)	95% CI
AGE	**0.03***	**0.14**	**1.03**	**0.003, 0.055**
ANXIETY DURING THE CONSULTATION	**-0.23***	**-0.16**	**0.80**	**-0.04, -0.42**
Self-efficacy in asking questions of unknown hospital doctors	0.00	0.00	1.00	
Self-efficacy in asking questions of known hospital doctors	0.00	0.00	1.00	
Gender	0.17	0.00	1.18	
How many questions do you think you asked	0.08	0.00	1.08	
Group allocation	0.31	0.00	1.36	
* $p < 0.05$				

14.7.2 Patient satisfaction

Patient satisfaction with the consultation was assessed twice, once immediately after the consultation and again three months later.

14.7.2.1 Patient satisfaction immediately after the consultation

One variable discriminated between participants who were highly satisfied and those who were not: age (Table 14.27). The likelihood of reporting higher levels of satisfaction increased with increasing age of the participant.

Table 14.27 Logistic model for patient satisfaction immediately after the consultation

Independent Variable	B	R	Exp(B)	95% CI
AGE	**0.04***	**0.18**	**1.04**	**0.008, 0.065**
Gender	-0.44	0.00	0.64	
Group allocation	-0.22	0.00	0.80	
Doctor satisfaction	0.29	0.09	1.33	
Expectations	-0.22	0.00	0.80	
Anxiety during consultation	0.09	0.00	1.10	
* $p < 0.05$				

14.7.2.2. Patient satisfaction with the consultation, three months after the index appointment

Participation in an intervention group was the only significant predictor of satisfaction (Table 14.28).

Table 14.28 Logistic model for patient satisfaction three months after the index visit

Independent Variable	B	R	Exp(B)	95% CI
Whether participant in intervention or control group	**-1.25 ****	**-0.21**	**0.29**	**-0.33, -2.17**
Total number of questions asked	-0.02	0.00	0.98	
* $p < 0.01$				

14.7.3 Doctor satisfaction

Due to the non-independence of the doctor data, it was not possible to predict a transformation in doctor satisfaction. Variables that were associated with doctor satisfaction in the earlier studies were examined both between consultation within doctors and within doctors. Table 14.29 presents the results of these analyses.

Between consultations within doctors, higher satisfaction is associated with higher levels of perceived adherence, and patient satisfaction, and there is a trend for doctors to be more satisfied if their expectations are fulfilled. However this variable was assessed retrospectively making any response subject to hindsight biases. It is therefore not a strong test of the association between expectations being met and doctor satisfaction.

Within doctors higher levels of satisfaction are associated with higher levels of perceived patient comprehension, lower levels of doctor anxiety and lower levels of patient satisfaction (see Table 14.29a).

Table 14.29 Variables associated with doctor satisfaction (between consultations, within doctors)

	B coefficient		
Doctor id	**Perceived patient adherence**	**Patient satisfaction**	**Fulfilment of expectations**
1	0.64	0.45	-2.01
2	0.78	0.94	-143
3	0.10	2.17	1.17
4	0.02	0.31	---
5	0.34	2.25	-1.50
6	0.24	-0.10	0.31
7	1.00	2.00	---
9	0.54	0.13	---
11	0.12	-0.45	---
12	0.42	0.80	-2.67
13	0.50	0.25	---
	t=2.5 df=10 **	t=2.7 df=10 **	t=1.9 df=5 *
* p < 0.1 ** p < 0.05			

Table 14.29a Variables associated with doctor satisfaction (within doctors)

Variable	**Multiple R**	**R Square**	**B**	**F(df)**
Perception of patient comprehension	0.82	0.68	1.48	21.2 (1,10) **
Own level of anxiety	0.85	0.72	-.66	25.5 (1,10)***
Patient satisfaction	0.77	0.60	-1.33	15.1 (1,10) **
** p < 0.01 *** p < 0.001				

14.8 Summary of main findings

14.8.1 Question asking

Question asking was not increased by the interventions.

- Question asking was associated with patient age and anxiety.
- Question asking was associated with self efficacy.

14.8.2 Patient satisfaction

Patient satisfaction was associated with receiving the interventions but only three months after the index visit.

- Patient satisfaction immediately after the consultation, was associated with patient age.

14.8.3 Doctor satisfaction

Between consultations, within doctors, doctors were more satisfied when:

- Patients were perceived as adherent.
- Patients reported higher levels of satisfaction with the consultation.
- Their own expectations were met.

Between doctors, doctors who reported higher levels of satisfaction with the consultation reported:

- Higher perceptions of patient comprehension.
- Lower levels of their own anxiety.

and had

- Patients who reported lower levels of satisfaction.

14.8.4 Interventions

- Some evidence that interventions had a different impact on male and female participants. The interventions had the immediate effect of reducing self-efficacy in question asking for male participants and increasing self-efficacy for female participants.

14.9 Discussion

This discussion will explore each of the above findings in turn. Part 14.9.1 examines patient question asking and the reasons why it is relatively high in the current study. Part 14.9.2 explores patient satisfaction and part 14.9.3 doctor satisfaction. Part 14.9.4 discusses the interventions.

14.9.1 Patient question asking

Summary

Patients in the current study asked many questions. This is in contrast to many earlier findings (Cartwright, 1964, Ley and Spelman, 1967, Korsch, Gozzi & Francis, 1968, Fisher, 1971, Ley, 1972, Mayou, Williamson & Foster, 1976, Roter, 1977, Roter, 1983). Table 14.30 describes the number of questions asked across five intervention studies. The only study in which the number of questions was higher than in the current study was carried out by Greenfield, Kaplan and Ware (1988), with a diabetic study population. They point out that there was no significant difference between experimental and control groups in the number of questions asked, which they explained by the large standard deviation in the experimental group.

Table 14.30 Comparisons across five intervention studies on the number of questions asked and the length of the consultation

Intervention Study	Number of questions asked during the consultation. (Number of questions asked per minute)*		Length of consultation		Participants
	Control Groups	Experimental Groups	Control Groups	Experimental Groups	Number and gender
	Mean (sd)	Mean (sd)	Mean(sd)	Mean (sd)	
Roter 1977 **	3.8 (0.3)	4.3 (0.4)	11.6	11.8	Reported as largely women
Greenfield and colleagues 1988	9.7 0.3 (0.25)	31.5 1.0(3.86)	32.5 (13.9)	30.3(13.8)	30 Women *** 29 Men
Thompson and colleagues 1990	3.5 (1.6) (0.4)	4.5 (1.5) (0.6)	8.7 (4.7)	7.7(2.9)	66 Women
McCann and Weinman 1996	2.4 (2.5) (0.3)	3.3 (3.0) (0.4)	7.2 (2.4)	8.4(3.0)	73 Women 46 Men
Current study	8.3 (4.8) (0.4)	9.9 (7.6) (0.6)	18.5 (6.6)	17.0 (7.1)	45 Women 63 Men

* Apart from the study by Greenfield and colleagues the number of questions asked per minute has been estimated from the data supplied in the reports.

** Standard deviations not reported

*** 59 participants completed the study, 48% of the experimental group (n=33) and 52% of the control group (n=26) were women.

The relatively large number of questions asked by participants in the current study has several possible explanations. These include

The relatively large number of questions asked by participants in the current study has several possible explanations. These include

- Self-efficacy in question asking
- Patient age
- Patient anxiety
- Length of the consultation
- Study population

Each of these points will be discussed before the discussion turns to the lack of effect of the interventions.

14.9.1.1 Self-efficacy

One explanation for the large number of questions asked in the current study may be related to the high level of self-efficacy patients reported in asking questions of both known and unknown hospital doctors. 'Ceiling effects' on both question asking and self efficacy would account for the failure of the interventions to alter these two variables. Table 14.31 describes the levels of self-efficacy across the four time points for the five groups.

Table 14.31 Self-efficacy in asking questions of known and unknown hospital doctors across the study period

	Self-efficacy Time 1 Mean (sd)	Self-efficacy Time 2 Mean (sd)	Self-efficacy Time 3 Mean (sd)	Self-efficacy Time 4 Mean (sd)
Known hospital doctors				
Group 1	84.1 (25.2)	86.4 (20.1)	90.0 (13.3)	93.1 (7.0)
Group 2	79.3 (27.8)	87.6 (15.5)	88.1 (19.4)	83.7 (20.9)
Group 3	92.1 (12.5)	88.6 (16.1)	92.9 (13.3)	85.4 (31.6)
Group 4	84.7 (20.4)	82.9 (22.8)	81.2 (20.6)	82.3 (25.5)
Group 5	74.8 (26.5)	-	75.7 (25.3)	73.6 (21.7)
Unknown hospital doctors				
Group 1	65.0 (31.1)	67.7 (24.1)	75.8 (22.8)	76.2 (22.8)
Group 2	68.0 (29.8)	76.8 (24.4)	75.4 (26.5)	66.8 (27.3)
Group 3	71.8 (35.5)	81.1 (28.3)	78.4 (27.2)	78.7 (22.9)
Group 4	74.2 (30.6)	74.7 (31.4)	76.5 (30.6)	78.1 (28.2)
Group 5	60.0 (29.1)	-	56.4 (30.1)	63.2 (27.7)

Immediately after the consultation there was a difference in level of self-efficacy in asking questions of both known and unknown hospital doctors between the intervention and control groups. The mean rank for the control group was lower than that for the experimental group. Three months after the index visit this difference between the experimental and control groups persisted for the known hospital doctor (see Table 14.32 (mean ranks) and 14.32a (mean scores)).

Table 14.32 Levels of self-efficacy in asking questions of known and unknown hospital doctors after the consultation (mean ranks)

	Experimental Groups Mean Rank	Control Groups Mean Rank	Mann Whitney U
Self-efficacy in asking questions immediately after the consultation			
Unknown hospital doctors	54.9	44.1	950.0 *
Known hospital doctors	56.8	40.9	805.5 ***
Self-efficacy in asking questions three months after the index visit			
Unknown hospital doctors	40.5	38.2	708.0
Known hospital doctors	44.3	33.6	545.5 **
* p = 0.06 ** p < 0.05 *** p < 0.01			

Table 14.32a Levels of self-efficacy in asking questions of known and unknown hospital doctors after the consultation (mean scores)

	Experimental Groups $\bar{x}$ (sd)	Control Groups $\bar{x}$ (sd)	t (df)
Self-efficacy in asking questions immediately after the consultation			
Unknown hospital doctors	76.3 (25.0)	64.0 (31.5)	2.1 (83.3)*
Known hospital doctors	90.0 (15.8)	77.8 (23.4)	3.0 (75.1)**
Self-efficacy in asking questions three months after the index visit			
Unknown hospital doctors	72.6 (24.9)	68.7 928.4)	0.6 (68.2)
Known hospital doctors	87.5 (19.7)	76.9 (23.2)	2.1 (67.0)*
* p < 0.05 ** p < 0.01			

At least three explanations are possible. One is that the interventions are having an impact on self-efficacy, but not immediately. Perhaps patients have to have the experience of a consultation where they can think about putting the intervention into practice before believing that they can ask questions. A second, related explanation, is that the experience of the consultation itself has an impact on self-efficacy in question asking. It may be that doctors have conducted consultations in a way which reinforces the interventions they have received, such as explicitly asking patients for questions. A further explanation is that the measure of self-efficacy used in the study is insufficiently sensitive to detect change in self-efficacy.

Examining the data for the intervention groups alone, a significant difference was found immediately after the intervention: participants in the letter group had a higher mean rank on how many questions do you want to ask than those in the identify and rehearse group who in turn had a higher mean rank than those in the identify group (see Table 14.12). One explanation for this result is that receiving encouragement to ask questions from the doctor you are going to see may enhance the perception of the doctor being open to questions. This may have more validity than receiving encouragement to ask questions from an individual who is identified as a researcher and not part of the diabetic team.

Another explanation is that the most salient barrier preventing patients from asking questions is the one this intervention was designed to address, that is, the cognitive barrier of perceived acceptability of asking questions. If the doctor is reinforcing this message during the consultation it would provide a possible explanation to the increased self-efficacy in asking questions reported immediately after the consultation.

However this result raises the question of why the intervention did not affect behaviour. Which barriers became salient for patients between completing the questionnaire after the intervention and the consultation taking place? One explanation is that diabetic clinic patients are occasionally allocated to a different doctor from the one they are scheduled to see. If patients see a doctor who did not sign the intervention letter they may believe that the message in the letter no longer pertains. As this was not identified as a possible barrier to question asking during the phase of study design, no record was made of the doctor the patient was scheduled to see and who the patient actually saw, information necessary to test this hypothesis. A second barrier that may arise is the length of time that elapses between receiving the intervention and the consultation (participants might wait for over an hour). A third possible explanation is related to the concept of the value of asking questions. Patients were not asked how important they thought it was to ask questions. If the behaviour being encouraged is not valued then it is less likely to occur.

A fourth possible explanation for intention not translating into behaviour isrelated to outcome expectancies of question asking (Rotter, 1954). The study did not assess participants' perceptions of the possible consequences of asking questions. Patients may have perceived negative consequences of increased question asking and therefore made the decision not to change their behaviour.

14.9.1.2 Age

Patients who are older ask more questions. Two explanations are possible, both related to changing health status. Older patients may be experiencing some of the long-term symptoms associated with diabetes or may be experiencing symptoms of late-onset

diabetes for the first time and both conditions may prompt question asking. No association was found between the number of questions asked by patients and the length of time they had had diabetes.

14.9.1.3 Anxiety

The second variable that predicted the likelihood of asking questions was anxiety during the consultation. The relatively high number of questions asked in the current study compared to the other studies described in Table 14.30 may be explained if patient anxiety was high in the other intervention study populations. Although patients in the current study reported relatively low levels of anxiety during the consultation there was still a significant difference in anxiety between those asking more than eight questions and those asking less than eight questions. More anxious patients were less likely to ask questions. This may explain why intention to ask questions immediately after the intervention did not predict behaviour.

The Yerkes-Dodson law defines the relationship between anxiety and performance on a task. It states that as anxiety increases so too does performance up to a point after which, as anxiety continues to increase, performance decreases. More complex tasks are performed better at lower levels of anxiety. Question asking in medical consultations is a complex task requiring an individual to remember what they want to ask while answering questions from a doctor, listening to information from the doctor and judging when best to ask the question(s).

An alternative explanation is that anxiety and self-efficacy are associated. With regard to

asking questions of known hospital doctors, anxiety and self-efficacy in asking questions were negatively correlated at entry to the study, immediately after the intervention and after the consultation. The pattern was similar for asking questions of unknown hospital doctors except that there was no correlation between these two variables at entry to the study. This result is in accordance with previous research which has demonstrated that self-efficacy is inversely related to anxiety (Schwarzer, 1992). In the current study, population anxiety had a more powerful impact on question asking behaviour.

14.9.1.4 Length of the consultation

Another possible explanation for the number of questions asked in the current study concerns the length of the consultation. Table 14.30 shows that the longer the consultation, the more questions patients ask. However the direction of influence cannot be determined: long consultations may encourage patients to ask more questions, patients who ask more questions may make consultations longer, or a third factor may influence both the number of questions patients ask and the length of the consultation.

14.9.1.5 Study population

Another explanation for the results on question asking may relate to the study population. Roter described her study population as chronically sick, poor, black women. They did not describe the doctors. It is probable that doctors were white, middle-class males and this may have produced an added barrier to question asking. However, the study by Thompson, Nanni and Schwankovsky (1990) described their patients as women visiting obstetric and gynaecological doctors in private practice in the USA and the number of questions they asked was very similar to that reported by Roter (1977).

In the current study patients were chronically ill and although there was a mix of ethnic origins, 60% were white and 58% were male. The doctors in the current study were both male and female and came from a number of different ethnic backgrounds. In the current study the interventions had a different impact on male and female patients. The interventions appear to have disempowered men, if only briefly, and empowered women with regard to their perceptions of their abilities to ask questions. This result was not anticipated.

One possible reason for this is that simple patient-focused interventions are more effective with women. Support for the finding of a differential impact of the interventions on male and female participants can be found in Table 14.30 where it can be seen that the studies reporting a significant difference between experimental and control groups were carried out on study populations composed of women.

At entry to the current study male participants reported high levels of self-efficacy in asking questions. Although research in other fields has shown that confidence in being able to carry out a task does not always translate into competence in carrying out the task (Marteau et al, 1991), the receipt of an intervention designed to increase self-efficacy may have caused them to re-evaluate their ability.

No attempt was made to determine how patients felt about the interventions and male participants may have found them patronising. In addition the interventions were delivered by a female researcher and this may have influenced how male patients perceived the interventions. Hall and colleagues (1994a) examining the relation between doctor

gender, patient gender and doctor age to patient satisfaction, reported lowest satisfaction amongst male patients examined by female doctors.

The current study was carried out in a diabetic outpatient clinic in the UK. The model of care currently offered to diabetic patients may be quite different from that offered to other groups of patients and those experiencing care in the 1970's and 1980's. Diabetic patients may be encouraged to ask questions through a variety of other channels such as meetings with diabetic nurses and encouragement from the British Diabetic Association. In relation to the experience of the diabetic clinic, analyses were performed to address the possibilities that number of previous visits to the clinic and length of time with diabetes influenced question asking. No associations were found between the number of questions asked by patients for these two variables.

As indicated above, another difference in the study populations is the large number of years separating the studies. The current study was carried out 18 years after the report on the study by Roter (1977). Patients may have become more active in consultations over this time period. The results on the number of questions asked per minute for the control groups in the studies described in Table 14.30 suggest that this is probably not the case.

14.9.2 Patient satisfaction

14.9.2.1 Immediately after the consultation

Summary Participants in the current study reported high levels of satisfaction with the consultation. Patient satisfaction was not associated with receipt of an intervention,

number of questions asked or the quality of the information received.

The possible reasons for high levels of satisfaction with medical consultations have been discussed in Chapter six. In the current analysis, patient age was associated with higher levels of satisfaction. This result supports that of the studies described in Chapter 4 where age was positively associated with satisfaction.

14.9.2.2 Patient satisfaction three months after the index visit.

Summary: Although still high, patient satisfaction three months after the index visit was significantly lower than immediately after the consultation. Patients in the groups who had received an intervention were more satisfied than patients in the control groups.

One explanation for this difference between intervention and control groups three months after the index visit is that when patients are removed from the immediacy of the intervention and have an opportunity to reflect on the intervention and consultation, they consider the consultation more satisfying. Patients may require time to reflect on the request to change their behaviour and to think through the possible consequences. Anecdotal evidence for this came from one study participant who, on returning the final questionnaire sent out three months after the initial visit, reported that it was only after the consultation when he had had an opportunity to think about what had happened that he appreciated the request to change. This suggests that the target appointment for examining behaviour change is not the consultation immediately following the intervention but the appointment after that when patients have had an opportunity to reflect on the interventions.

The success reported by Greenfield, Kaplan and Ware (1988) may therefore be explained by the design of their study. Patients were invited to join the study at one clinic visit when the protocol was explained. Interventions were given at the next clinic visit, several weeks later, prior to their consultation, which was audio-taped. The procedure was repeated at the next clinic visit. This design allowed patients to consider participation and the possible consequences prior to receipt of the intervention.

Other possible explanations for a change in satisfaction score are suggested by Norman and Parker (1996). They suggest that any interpretation of changes in scores should consider whether the participant has recalibrated the scale for assessing satisfaction or changed their conceptualisation of the meaning attached to satisfaction.

14.9.3 Doctor satisfaction

Summary: Doctors in the study reported mid-range levels of satisfaction. Doctor satisfaction was not influenced by the interventions. Four variables were associated with doctor satisfaction: perception of patient adherence, perception of patient comprehension, patient satisfaction and own level of anxiety.

As in the two previous studies of this thesis, anxiety in the consultation was associated with doctor satisfaction. In the two earlier studies, patient anxiety, either as perceived by the doctor or as reported by the patient, was important. In the current study, the doctors' perception of their own anxiety level is important.

Perception of patient adherence was also associated with doctor satisfaction with the

consultation. The association between these two variables can be thought of in at least three ways: does the perception of a patient as going to follow advice increase satisfaction with the consultation, does higher satisfaction with the consultation lead to optimistic estimates of adherence, or does some third aspect influence both of these variables, such as perception of comprehension.

Perception of patient comprehension was positively associated with doctor satisfaction. This variable has been associated with doctor satisfaction in all three studies. As with perception of adherence it is not possible to determine the causal pathway by which this association exists within the study design.

In support of the study in the dermatology clinic, the current study provided some evidence that doctor satisfaction was associated with patient satisfaction with the consultation.

No evidence was provided by the current study that doctors are less satisfied with consultations in which patients ask questions. The negative affects reported by doctors for the patients in the study conducted by Roter (1977) were not found in the current study. As the interventions did not increase question asking in the current study it cannot be ruled out that increased question asking does not have adverse effects on doctors. It may be a change in the interaction pattern rather than the absolute level of question asking that is important. In diabetic clinics the expected interaction pattern may be one of high patient participation.

These results raise the question as to whether different aspects of consultations and patient behaviour are important for different groups of doctors depending upon the speciality in which they are working. Doctors in different clinics may have different goals and aims for their consultations, some may have identified the effectiveness of being patient-centred, while others may still work to the doctor-centred model of the consultation. It is also possible that the expectations of the consultation will vary for both doctors and patients depending on the type of clinic being attended.

14.9.4 The interventions

Summary: The three simple patient-focused interventions were designed to increase question asking by patients in outpatient consultations. They did not. The number of questions asked by patients in this study was high and the reasons for this have been discussed in the previous section. It could be argued that participants were already empowered and active in their consultations so that even effective interventions would be unlikely to increase the number of questions asked. The analysis of the questions identified in the intervention that were actually asked in the consultation suggests that participants asked most of the questions they wanted to ask (see Table 14.20) and they rated the quality of the information received highly. Against this background, the next section presents some of the possible reasons for the interventions being ineffective.

The nearest any intervention came to having a measurable effect on question asking was the intervention of the letter from the doctor which resulted in patients indicating, immediately after the intervention, that they would like to ask more questions during the consultation. This intention was not translated into behaviour. The patients in the current study were already active in the consultation and they may have believed it inappropriate

to become even more active and might have been uncomfortable in that role. However, no assessment was made of patients beliefs about this. The intervention may empower patients to change the way they intend to behave but once seated in the consultation, confronted by a doctor they find themselves unable to put this intention into effect.

Chapter 13 described several possible barriers to patients asking questions: patients may forget, they may be anxious, they may not believe they have the ability to ask questions in a clinical setting, they may feel embarrassed, they may have overly-deferential attitudes towards doctors or they may have no questions they want to ask. It is possible that a combination of these barriers influences how patients behave in consultations. These however remain hypotheses.

This study targeted some barriers to question asking but no attempt was made to target the barriers salient for each patient. It is possible that a better use of these interventions would have been to find out from each patient how easy they found it to ask questions of doctors, how much they valued asking questions, what they perceived to be the consequences of question asking, and then to find out what it was that prevented them from asking questions. The intervention could then have targeted their own perceived difficulties. The results with regard to the gender of patients suggest that a more sensitive approach to the needs of participants may have been more successful. Another possible reason for the interventions failing to encourage patients to ask questions may be that patients already have the information they require. It is not possible to control for the information that doctors spontaneously offer to patients, thereby negating the need to ask questions. From the current study, there is evidence that patients were satisfied with the information they received during the consultation and the quality of information received

was rated highly suggesting that the information given was addressing patients' needs and perhaps pre-empting questions they had previously identified.

Another possible reason for the failure of the interventions to increase question asking was the content of the interventions. The interventions were designed to examine three aspects of the multi-faceted interventions used by Roter (1977), Greenfield, Kaplan and Ware (1988) and Thompson, Nanni and Schwankovsky (1990). They were designed to be short, simple and patient-focused. The may have been unsuccessful because they were too short and simple. In the current study each intervention took around five minutes to complete. Greenfield Kaplan and Ware (1988) reported an intervention of 20 minutes which patients received twice. The experimental group in the study by Roter received an intervention of 10 minutes duration with a health educator and women entered their consultations with a list of questions which they wanted to ask.

The study by McCann and Weinman (1996) does not report how long patients had in order to read the intervention leaflet, although it is likely to have been a few minutes at most. The difference between experimental and control groups in this study, like the current study, was marginal. The intervention in the study by Thompson, Nanni and Schwankovsky (1990) was briefer but was not set in a chronic care clinic where it may be important to spend time breaking down barriers to question asking that have developed over several years experience of the clinic. In addition, the dependent variable in this study was a self-report assessment of how many questions participants had asked.

14.10 Conclusions

This study was designed to evaluate three simple elements of the complex interaction

packages found by Roter (1977), Greenfield, Kaplan and Ware (1988) and Thompson, Nanni and Schwankovsky (1990) to be effective in increasing patient question asking and improving health status. The conclusions are presented in four sections.

14.10.1 Empowering patients

The results of the current study together with those of McCann and Weinman (1996) suggest that simple brief patient-focused interventions do not change patient behaviour in medical outpatient consultations in the UK The results do, however, have implications for future research in this area and suggest three methods which could be assessed for their ability to change patient behaviour:

(a) offering more complex interventions

(b) providing an intervention twice

(c) targeting interventions individually

Each of these methods will be discussed, the more complex interventions may be successful as they can incorporate several elements (such as identifying questions, writing questions down, rehearsing skills, receiving statements of encouragement and approval) which address more than one of the barriers to question asking with an improved chance of addressing the barrier pertinent to each individual patient.

Providing interventions on more than one occasion may change patient behaviour as patients will have had an opportunity to reflect on the consequences of any behaviour change prior to trying to put this into action. Patients have become accustomed to doctor-centred consultations, being more active breaks the implied rules of their

traditional passive role. Patients may therefore require time for their affective state with regard to being active in the consultation to be compatible with their cognitive state.

The third possibility is to design an intervention for each patient individually. After talking to a patient about what difficulties they may have in asking questions an intervention could be targeted at what they perceive to be their difficulties. Designing individual interventions also allows for the assessment of the value that patients put on question asking and what they perceive to be the consequences of asking questions. An intervention programme of this design would however be extremely costly. An alternative approach is to conduct descriptive studies which examine patients cognitions and attitudes about both their role in a consultation and to question asking. As well as providing some insight into whether patients can still benefit from increased question asking, a generic intervention could then be designed based on evidence of precursors of (a) asking questions and (b) not asking questions.

An alternative methodology is to change behaviour in medical consultations by targetting the behaviour of doctors. It may be more cost effective to concentrate on the behaviour of doctors and train them to find out what it is each patient requires from their consultation.

These four methods have a common theme running through them. They all embrace the concept of doing something that the patient wants, and not imposing values and ideas on them. This philosophy is very much at the heart of the patient-centred model of medicine, as discussed by Stewart and colleagues (1995). Participant-centred interventions would allow the person at whom the intervention is targeted to identify their goals and aims for

a consultation and what difficulties they perceive in achieving these goals. A participant-centred intervention would then provide alternative ways to overcome the difficulties and would allow the participant to choose which of the alternatives they would like to try. This would be done with encouragement and help from the person providing the intervention.

The target of interventions

A question that the data has raised is whether there is any recent evidence that increased question asking will benefit patients. Question asking has been examined as it is considered to be a suitable measure of patient participation. One study compared accuracy of recall with regard to what their doctor had asked them to do for patients who asked questions prepared prior to the interview and patients who asked questions that arose from what they heard in the consultation (Robinson and Whitfield, 1988) They reported that patients who produced the prepared questions were more likely to make errors and omissions of recall of treatment. This suggests that question asking in itself is not the important element but that the opportunity to comment and reflect on what is said by the doctor during the consultation is more important.

Further support for the idea that it may not be question asking per se that is important but active participation in the consultation is found in a study by Frederkison (1995). This study explored patients views about eight information-exchange tasks related to general practice consultations. Patients rated as essential the four tasks that required active participation of the patient. Each of these tasks were couched in terms that put the onus on the doctor to initiate patient participation. These results suggest that a simple measure of question asking by patients may not be the optimum measure of patient participation.

Theoretical perspectives

That a model could be used to inform the design of interventions raises a related issue. Most intervention studies have been a-theoretical. Interventions tend to be developed on the basis of past experience, what has worked before, and these may not be theory based. There are several models to predict a change in health behaviour which could have informed the design of studies in this area. Rotter's Social Learning Theory (1954) has already been implied as one of the ways to move forward with intervention studies. Social learning theory conceives of question asking behaviour as a consequence of both the value that patients put on asking questions as well as their perceptions of the consequences of asking questions. Current question asking may be explained by that behaviour receiving positive reinforcement in earlier medical encounters. If question asking in the past has not been rewarded or has been received in a way that a patient perceives as negative, it may be less likely to be repeated. Patients may ask questions if they perceive that that is the only way to get the information they require and they believe that asking questions will have positive consequences.

The Theory of Reasoned Action (Fishbein and Ajzen, 1975) places question asking in the context of a behaviour under voluntary control and therefore largely guided by intention. This theory has four components beliefs about: the consequences of performing a particular behaviour, the value attached to those consequences, whether other people important to the person view performing the behaviour as important and, whether, or how much, the individual values the important other's approval. For question asking it could be hypothesised that an individual is more likely to ask questions in a medical consultation if they believe there are positive consequences (e.g. such as getting relevant information)

which are highly valued (e.g. provides better understanding of the illness), and if they have an important person in their life whose approval they seek and who also values question asking in the consultation (the doctor).

In retrospect, two results from the current study may be seen as providing support for elements in this model. The fact that men in the intervention groups became disempowered by the interventions may be related to how they perceived the individual providing the intervention. The woman providing the intervention may not have been seen as an 'important other' and her approval of asking questions may not have been valued, perhaps especially in comparison to the doctor. The second piece of support for the theory of reasoned action is linked to the result that the only intervention to have an effect on question asking was receipt of a letter from the doctor. Receipt of this intervention resulted in participants indicating that they would like to ask more questions in the consultation. Although no measure was taken as to whether or not the doctor was perceived as an 'important other' the result suggests that knowledge that a behaviour is valued by someone who it could be assumed is 'important' does have an impact.

Several models of behaviour change propose that the likelihood of change depends upon which stage in a cycle of change an individual is, and the match between the intervention and this stage (Weinstein, 1988, Schwarzer, 1992) The most used stages of change model is the transtheoretical model of behaviour change (Prochaska and DiClimente (1990)). In the transtheoretical model of behaviour change an individual may be at any one of six stages from the precontemplation stage, not even considering a change in behaviour through to the maintenance stage where they will be using strategies to encourage continued use of the new behaviour. The model also includes the possibility

of relapse and re-entering the cycle again.

Prochaska and DiClemente (1990) have identified tasks related to each of the stages of behaviour change. The ideas encompassed by the tasks are patient centred and many components are similar to those in the models of behaviour change identified above. The models for predicting behaviour change may interact with the stages of change model in that different elements may be important at different stages. For example, at the precontemplation stage the concepts of what has happened in the past related to the target behaviour and how important others view the behaviour may be valid. At the contemplation stage the potential consequences (disadvantages and benefits) and the value attributed to these consequences and the behaviour itself may be important. At the action stage, the cue to action component, together with perceived seriousness and susceptibility may be important in addition to the perceived consequences.

If the doctors are the target for the intervention, additional models of behaviour change related to behaviour at a group level (Latane, 1981, Festinger, 1954, Janis, 1982) and at the level of the organisation (Mintzberg, 1983 and Katz and Kahn, 1966) might inform the design of such studies.

Using these theories and models to explain the consultation behaviour of patients and doctors is likely to lead to different and potentially more effective interventions than has hitherto been the case.

14.10.2 Patient satisfaction

As in earlier studies described in Chapter 4, patients age was predictive of patient

satisfaction with the consultation. Unlike the two earlier descriptive studies in this thesis, there was no interaction with doctor satisfaction. Patients who were more active in the interview were not more satisfied with the consultation.

14.10.3 Doctor satisfaction

Doctor satisfaction was assessed with a one-item seven point scale which showed no skewness in the results. Doctors did not perceive consultations in which patients asked a high number of questions as unsatisfactory. Nor did they perceive patients who asked questions as angry or anxious. It may be that doctors in the current study have become accustomed to a variety of patient styles and have developed strategies to deal with each of these which do not impinge on their own goals for the consultation and therefore their satisfaction.

14.10.4 Implications for future research

The results have some implications for four aspects of the design of future research on patient empowerment:

Theory:

- Interventions should be theory based.
- Interventions should encompass the concept of being participant-centred.

Design:

- The effects of any interventions should be assessed over a period of time as there is some evidence that patients require time to consider the implications of changing their behaviour in consultations.
- The gender of participants (patients and doctors) should be included in any power

calculations and proposed analysis.

Analysis:

- The gender and status of the provider of the intervention should be considered.
- The hierarchical structure of much of the data from research in the field of doctor patient communication should be taken into account. The non-independence of much of the data from doctors should be allowed for.

Measures:

- Cost-effectiveness should be examined. The four types of interventions described above would probably cost more than the intervention described in the current study, but the effectiveness may be much greater.

Chapter 15

Summary and conclusions

15.1 Introduction

This thesis has examined patient and doctor satisfaction with medical consultations. This chapter draws conclusions based on the descriptive and experimental studies described earlier. Section 15.2 will consider patient satisfaction and section 15.3 considers doctor satisfaction. The implications for future research will be examined in section 15.4.

15.2 Patient satisfaction

15.2.1 Assessment of patient satisfaction

This thesis was concerned with assessing patient satisfaction in an outpatient setting where patients are keen to leave the clinic after their appointment. Using principles of psychometric development a reliable and valid single item scale was constructed to assess patient satisfaction that met the requirements of the study. The measure was easy to understand, had high face validity, took a minimum of time to complete and was appropriate for the purpose of the study which was to examine associations between patient satisfaction and input and process variables.

15.2.2 Correlates of patient satisfaction

Examination of early research suggested that contextual elements of consultations had little impact on patient satisfaction, that the most important demographic variable was age and that the variables with the most consistent association with patient satisfaction were

those related to the process (see Chapter 4).

This thesis examined some of these variables in three studies with similar methodology but different patient populations. The results were consistent with the earlier research as age and process variables were associated with patient satisfaction. These results also suggest other conclusions. It may not be possible to identify variables that are consistently associated with patient satisfaction across all study populations. This may be related to the different levels of health threat imposed by different conditions and individual differences in how these are perceived by patients which leads back to the concept of the need to be patient-centred when exploring satisfaction with consultations. Secondly, experimental research may change the nature of the consultation. A third possible conclusion is that a more salient aspect of doctor-patient consultations has yet to be identified and assessed.

15.2.3 Interventions to increase patient satisfaction

The results of the study reported in Chapter 14 and that conducted by McCann and Weinman (1996) suggest that simple and brief patient-focused interventions are not effective in changing behaviour in U.K. medical consultations.

Several reasons for the interventions failing to alter patient satisfaction were discussed in Chapter 14 and the point was raised that most studies have been a-theoretical. The main conclusion to be drawn is that interventions designed to change behaviour in the health care setting should be drawn from the theories of health behaviour and behaviour change that currently exist. With regard to changing question asking behaviour it would be

appropriate to examine the value patients put on asking questions or being active in an interview, and the outcome expectancies patients have related to such behaviour. It would also be appropriate to examine whether interventions are more or less successful dependent on the gender of the participants.

In a similar way, interventions targeted at health professionals should consider not only the models of individual behaviour change but also the models of behaviour change relevant for groups and organisations.

15.2.4 Models of patient satisfaction

This thesis did not aim to test a particular model. The results suggest, however, that currently no model of patient satisfaction can explain the results. A more successful explanation of satisfaction with a specific consultation might be one that integrates the models proposed by Koehler, Fottler and Swan (1992) and Strasser and colleagues (1993) with Miller's (1977) multi-layered expectations. This model would then emphasise the interactional nature of consultations while including individual differences and raising the possibility that patient satisfaction may vary across patient populations or medical encounters.

15.3 Doctor satisfaction

There has been little replication in the variables examined for an association with doctor satisfaction and few doctors have participated. As demonstrated in the current studies, doctor satisfaction can be assessed by a single-item scale.

The experimental investigation showed that doctors were not less satisfied when patients asked questions nor did doctors perceive patients who asked questions as angry or anxious. This result contrasts with the result from the study in the antenatal clinic where doctors reported lower levels of satisfaction when women had expressed an intention to ask questions prior to the consultation. These contrasting results may be explained by the settings for the studies. The experimental study was carried out in a clinic dealing with a chronic illness, with a study population of mixed gender from a relatively deprived area of inner city London. The descriptive study was conducted in an antenatal clinic with a relatively wealthy female patient population who are less likely to perceive themselves as ill.

Two variables that had not been examined in previous research were positively associated with doctor satisfaction: perception of patient comprehension and perception of patient adherence. Perceived comprehension was important in all three studies but perception of adherence was only examined in the diabetic clinic where future health status is dependent on well controlled blood glucose levels and doctors may perceive good control to be associated with adherence.

Anxiety was associated with doctor satisfaction in two of the current studies supporting previous data on the impact anxiety may have on doctor satisfaction (see Chapter eight). In one study the doctor was more satisfied when patients reported lower levels of anxiety after the consultation and in the experimental study lower levels of doctors' own anxiety was associated with increased satisfaction.

The results on doctor satisfaction reinforce the importance of individual differences in that, for both patients and doctors, different variables may be associated with satisfaction as a consequence of the type of health care being provided and the actual and perceived health threat involved.

15.4 Directions for further research

Future research should aim to identify whether there are any aspects associated with satisfaction in one clinical setting which are also valid in other settings. If the doctors' perception of the patient is important it will be necessary to examine on what basis these judgements are made.

Such research will need to use the same methods so that comparisons across studies can be made. The model of patient satisfaction suggested by the current results to be most useful in explaining satisfaction, as described above, needs to be operationalised and assessed.

Models of doctor satisfaction with medical consultations should be developed and tested at the same time. The consequences of different levels of doctor satisfaction should be explored.

It may be that the most salient variables influencing patient and doctor satisfaction have yet to be identified. For patients, expectations about the content of the communication in a consultation may be important. The content of a consultation may include good or bad news. Whether this is expected, and what the consequences are, could be a powerful

influence on satisfaction (Fallowfield, Ford & Lewis, 1995).

Future research should explore the influence of gender on both interaction patterns in and satisfaction with consultations. Hall and colleagues (1994a, 1994b) identified differences when looking at gender interaction in consultations in the USA and this requires replication in the U.K.

In conclusion, patient and doctor satisfaction are not simply associated with factors integral to the individual. Behaviour and satisfaction of both patient and doctor are not fixed or immutable, but fluid and variable. For patients, this has long been recognised, although doctors are often thought to behave and react in a fixed manner (Byrne and Long, 1976). Recognising that this is not so, research in this area will be advanced when models of satisfaction and behaviour change are used to inform study design.

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Appendix One

Thesis Overview

The research questions evolved whilst carrying out research in an antenatal clinic. The interest in patient satisfaction with the consultation developed from the experience of speaking to participants after their consultation when they would comment on the consultation and spontaneously offer an opinion on it.

Reading relevant literature identified that the work on patient satisfaction was frequently concerned with general practice consultations, had been conducted in the United States and that patient satisfaction with specific outpatient consultations had not been rigorously examined.

The initial study was designed to provide a reliable and valid measure of patient satisfaction which would then be tested in both acute and chronic care contexts. Doctor satisfaction was introduced as a possible predictor of patient satisfaction following further literature reviews.

The fourth study developed from the earlier work in the thesis and was designed to include an intervention to establish if it was possible to experimentally alter patient and doctor satisfaction by changing behaviour in the consultation.

The main research questions and their origins for each study are described below:

Study 1: The question this study addressed is "Can patient satisfaction with an outpatient consultation be measured reliably and validly using a single-item scale?"

The question developed from the literature review on patient satisfaction which showed that most of the work on patient satisfaction was not conducted in relation to outpatient consultations and that the vigour of the studies was questionable.

The next two studies were designed to test the measure of satisfaction and to examine patient satisfaction in two different contexts, acute and chronic care.

Study 2: The question for study 2 was "What factors are associated with patient and doctor satisfaction with the consultation in an 'acute' care clinic or one where patients do not necessarily perceive themselves as ill?"

This question developed from the research that I was initially involved in on the psychological aspects of prenatal screening where patients would comment on aspects of the consultation when I spoke to them after the consultation.

Study 3: The questions for study 3 were:

a. "What factors are associated with patient and doctor satisfaction with consultations that take place on a chronic care outpatient clinic.

b. What are the similarities and differences in the factors associated with patient and doctor satisfaction across different care settings.

These questions were identified as part of the research from the beginning where it was considered that the different context of care may influence the factors associated with satisfaction.

Study 4: The questions in this study were:

a. Can patient satisfaction with outpatient consultations be improved by encouraging patients to ask questions in the consultation?

b. What factors are associated with patient and doctor satisfaction with an outpatient consultation in a different chronic care setting?

These questions developed from the literature on empowering patients to get the information they require and whether this influences both patient and doctor satisfaction.

Question b developed as the previous study had one doctor as a participant and it was considered that the results could not be generalised.

Appendix Two

Contextual variables that have been examined for an association with patient satisfaction

Contextual variables	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
Variable				
Method of healthcare payment	-	-	-	-
Type of presenting problem	0	-	-	x^1
Number of previous visits to clinic	-	-	-	-
Type of visit	-	-	-	-
Presence of continuity of care	-	-	-	-
Medical diagnosis	-	0	-	x^2
Number of months participants known to each other	-	-	-	-
Whether patient seen outside the clinic	-	-	-	-
Doctor on call	-	-	-	-
Complexity of the regimen	-	-	-	-
Referral by doctor	x(-) if patient referred = less satisfaction	-	-	-
Time of interaction (am/pm)	0	-	-	-
Teaching/general hospital	-	-	-	0
Follow up visit arranged	-	-	-	0
Time spent in waiting room	-	-	-	-

Coding frame: - = Not examined 0 = No association x = A relationship
x(-) = Inverse relationship x(+) = Positive relationship
x^1 = Patients with shorter history of headache were more satisfied
x^2 = Patients with tension headaches were more satisfied

Appendix Two continued

Contextual variables that have been examined for an association with patient satisfaction

Contextual variables	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Variable				
Method of healthcare payment	-	-	-	-
Type of presenting problem	-	-	-	-
Number of previous visits to clinic	-	-	-	x(+)
Type of visit				x^3
Presence of continuity of care	0	-	-	-
Medical diagnosis	-	-	-	-
Number of months participants known to each other	0	-	-	-
Whether patient seen outside the clinic	0	-	-	-
Doctor on call	x(-) on call = less satisfaction	-	-	-
Complexity of the regimen	0	-	0	-
Referral by doctor	0	-	-	-
Time of interaction (am/pm)	-	-	-	-
Teaching/general hospital	-	-	-	-
Follow up visit arranged	-	-	-	-
Time spent in waiting room	-	-	-	-

Coding frame: - = Not examined 0 = No association x = A relationship
x(-) = Inverse relationship
x(+) = Positive relationship
x^3 = Visits to obstetrics and gynaecology clinics more satisfactory than family practitioners and specialists

Appendix Two continued

Contextual variables that have been examined for an association with patient satisfaction

Contextual variables	Study			
	Friis	**Johnson**	**Bertakis**	**Hill**
Variable				
Method of healthcare payment	x^4	-	-	-
Type of presenting problem	-	-	-	-
Number of previous visits to clinic	-	-	-	-
Type of visit	x^5	-	-	-
Presence of continuity of care	-	-	-	x(+)
Medical diagnosis	-	-	-	-
Number of months participants known to each other	-	-	-	-
Whether patient seen outside the clinic	-	-	-	-
Doctor on call	-	-	-	-
Complexity of the regimen	-	-	-	-
Referral by doctor	-	-	-	-
Time of interaction (am/pm)	-	-	-	-
Teaching/general hospital	-	-	-	-
Follow up visit arranged	-	-	-	-
Time spent in waiting room	-	-	-	x(-)

Coding frame: - = Not examined 0 = No association x = A relationship

x(-) = Inverse relationship

x(+) = Positive relationship

x^4 =Self-payers less satisfied

x^5 =Visits to emergency room more satisfactory

Appendix Two continued

Contextual variables that have been examined for an association with patient satisfaction

Contextual variables	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Variable				
Method of healthcare payment	-	-	-	-
Type of presenting problem	-	-	-	0
Number of previous visits to clinic	-	-	-	x(+)
Type of visit	-	-	-	-
Presence of continuity of care	-	-	-	-
Medical diagnosis	-	-	-	-
Number of months participants known to each other	-	-	-	-
Whether patient seen outside the clinic	-	-	-	-
Doctor on call	-	-	-	-
Complexity of the regimen	-	-	-	-
Referral by doctor	-	-	-	-
Time of interaction (am/pm)	-	-	-	-
Teaching/general hospital	-	-	-	-
Follow up visit arranged	-	-	-	-
Time spent in waiting room	-	-	-	-

Coding frame: - = Not examined 0 = No association x = A relationship
x(-) = Inverse relationship
x(+) = Positive relationship

Appendix Two continued

Contextual variables that have been examined for an association with patient satisfaction

Contextual variables	Study	
	Butow	**Michie**
Variable		
Method of healthcare payment	-	-
Type of presenting problem	-	-
Number of previous visits to clinic	-	-
Type of visit	-	-
Presence of continuity of care	-	-
Medical diagnosis	-	x^6
Number of months participants known to each other	-	-
Whether patient seen outside the clinic	-	-
Doctor on call	-	-
Complexity of the regimen	-	-
Referral by doctor	-	-
Time of interaction (am/pm)	-	-
Teaching/general hospital	-	-
Follow up visit arranged	-	-
Time spent in waiting room	-	-

Coding frame: - = Not examined 0 = No association
x = A relationship
x(-) = Inverse relationship
x(+) = Positive relationship
x^6 =Patients more satisfied if diagnosis known

Appendix Three

Demographic variables examined for an association with patient satisfaction

Demographic variables	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
<u>Patient</u>				
Gender	-	0	-	0
Age	-	0	-	0
Social Class	0	-	-	0
Race/Ethnicity	-	0	-	-
Marital Status	-	-	-	0
Level of Education	0	0	-	0
Annual Income	-	-	-	-
Socio-economic status	-	-	-	-
<u>Doctor</u>				
Gender	-	-	-	-
Seniority	-	-	-	0
Age	-	-	-	-
Appearance	-	-	-	-
Ethnicity	-	-	-	-

Coding frame: - = Not examined 0 = No association

Appendix Three continued

Demographic variables examined for an association with patient satisfaction

Demographic variables	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Patient				
Gender	0	-	-	x^1
Age	x^2	-	-	0
Social Class	-	-	-	-
Race/Ethnicity	0	-	0	-
Marital Status	-	-	-	-
Level of Education	-	-	x(-)	-
Annual Income	-	-	-	-
Socio-economic status	-	-	-	-
Doctor				
Gender	-	-	-	-
Seniority	-	0	-	-
Age	-	-	-	x(+)
Appearance	0	-	-	-
Ethnicity	-	-	-	-

Coding frame:
- = Not examined
0 = No association
x(-) = Inverse relationship
x(+) = Positive relationship
x^1 =Women more satisfied
x^2 = Older patients more satisfied

Appendix Three continued

Demographic variables examined for an association with patient satisfaction

Demographic variables	Study			
	Friis	**Johnson**	**Bertakis**	**Hill**
<u>Patient</u>				
Gender	x^1	-	x^1	-
Age	x^2	-	x^2	-
Social Class	-	-	-	-
Race/Ethnicity	0	-	x^3	-
Marital Status	-	-	-	-
Level of Education	-	-	-	-
Annual Income	-	-	$x(+)^4$ $x(-)^5$	-
Socio-economic status	-	-	-	-
<u>Doctor</u>				
Gender	-	-	0	-
Seniority	-	-	-	-
Age	-	-	-	-
Appearance	0	-	-	-
Ethnicity	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(-) = Inverse relationship
x(+) = Positive relationship
x^1 =Women more satisfied
x^2 = Older patients more satisfied
x^3 = Patients describing their ethnic origin as white more satisfied than all other groups
x^4 = On one dimension (interpersonal skills)
x^5 = On one dimension (supportiveness)

Appendix Three continued

Demographic variables examined for an association with patient satisfaction

Demographic variables	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Patient				
Gender	-	x[1]	-	-
Age	0	-	-	-
Social Class	-	-	-	-
Race/Ethnicity	0	-	-	-
Marital Status	-	-	-	-
Level of Education	x(-)	-	-	-
Annual Income	-	-	-	-
Socio-economic status	-	-	-	-
Doctor				
Gender	0	x[6]	-	0
Seniority	0	-	-	-
Age	-	x(+)	-	-
Appearance	-	-	-	-
Ethnicity	-	-	-	0

Coding frame: - = Not examined 0 = No association
x(-) = Inverse relationship
x(+) = Positive relationship
x[1] =Women more satisfied
x[6] = Patients more satisfied with male doctors

Appendix Three continued

Demographic variables examined for an association with patient satisfaction

Demographic variables	Study	
	Butow	**Michie**
Patient		
Gender	-	-
Age	-	x^2
Social Class	-	-
Race/Ethnicity	-	-
Marital Status	-	-
Level of Education	-	-
Annual Income	-	-
Socio-economic status	-	-
Doctor		
Gender	-	-
Seniority	-	-
Age	-	-
Appearance	-	-
Ethnicity	-	-

Coding frame: - = Not examined 0 = No association
x^2 =Older patients more satisfied

Appendix Four

Cognitive and affective variables of the patient that have been examined for an association with patient satisfaction

Cognitive and affective variables	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
Fulfilment of patient requests	-	-	-	-
Perception of time spent with doctor	-	-	-	-
Perceived health status	-	-	-	-
Expectations met	x(+)	-	-	-
Perception of doctor as friendly	x(+)	-	-	-
Main worry addressed	x(+)	-	-	-
Perception of uncertainty in doctor	-	-	-	-

Cognitive and affective variables	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Fulfilment of patient requests	-	-	-	-
Perception of time spent with doctor	0	-	-	-
Perceived health status	-	-	x(+)	-
Expectations met	-	-	-	-
Perception of doctor as friendly	-	-	-	-
Main worry addressed	-	-	-	-
Perception of uncertainty in doctor	-	-	-	-

Coding frame - = Not examined 0 = No relationship
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Four continued

Cognitive and affective variables of the patient that have been examined for an association with patient satisfaction

Cognitive and affective variables	Study			
	Friis	**Johnson**	**Bertakis**	**Hill**
Fulfilment of patient requests	-	-	-	-
Perception of time spent with doctor	-	-	-	-
Perceived health status	-	-	0	-
Expectations met	-	-	-	-
Perception of doctor as friendly	-	-	-	-
Main worry addressed	-	-	-	-
Perception of uncertainty in doctor	-	x(-)	-	-

Cognitive and affective variables	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Fulfilment of patient requests	-	-	-	x(+)
Perception of time spent with doctor	-	-	-	-
Perceived health status	-	-	-	-
Expectations met	-	-	-	-
Perception of doctor as friendly	-	-	-	-
Main worry addressed	-	-	-	-
Perception of uncertainty in doctor	-	-	-	-

Coding frame - = Not examined 0 = No relationship
x(+) = Positive relationship
x(-) = Inverse relationship

Appendix Four continued

Cognitive and affective variables of the patient that have been examined for an association with patient satisfaction

Cognitive and affective variables	Study	
	Butow	**Michie**
Fulfilment of patient requests	-	-
Perception of time spent with doctor	-	-
Perceived health status	-	-
Expectations met	-	-
Perception of doctor as friendly	-	-
Main worry addressed	-	-
Perception of uncertainty in doctor	-	-

Coding frame

- = Not examined
x(+) = Positive relationship
x(-) = Inverse relationship
0 = No relationship

Appendix Five

Cognitive and affective variables of the doctor that have been examined for an association with patient satisfaction

Cognitive and affective variables of doctor	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
Satisfaction with encounter	-	-	-	-
Doctor feeling stressed	-	-	-	-
Perception of patient's adherence	-	-	-	-
Perception of patient's degree of medical control	-	-	-	-
Doctor's skill at decoding body movements	-	-	x(+)[1]	-
Doctor's skills at decoding positive cues to emotion	-	-	x(+)[1]	-
Doctors intention to communicate positive emotion but actually communicates negative emotion	-	-	x(+)[1]	-
Empathy	-	-	-	-
Courtesy	-	-	-	-
Perceived health status	-	-	-	-
Doctor's perception of relationship	-	-	-	-
Expression of affiliativeness	-	-	-	-
Affect	-	-	-	-

Coding frame: - = Not examined
x(+)[1] = On one dimension (art of care)

Appendix Five continued

Cognitive and affective variables of the doctor that have been examined for an association with patient satisfaction

Cognitive and affective variables of doctor	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Satisfaction with encounter	-	-	-	-
Doctor feeling stressed	0	-	-	-
Perception of patient's adherence	0	-	-	-
Perception of patient's degree of medical control	0	-	-	-
Doctor's skill at decoding body movements	-	-	-	-
Doctor's skills at decoding positive cues to emotion	-	-	-	-
Doctors intention to communicate positive emotion but actually communicates negative emotion	-	-	-	-
Empathy	-	x(+)	-	-
Courtesy	-	x(+)	-	-
Perceived health status	-	-	-	-
Doctor's perception of relationship	-	-	-	-
Expression of affiliativeness	-	-	-	x(+)
Affect	-	-	-	-

Coding frame: - = Not examined 0 = No relationship
x(+) = Positive relationship

Appendix Five continued

Cognitive and affective variables of the doctor that have been examined for an association with patient satisfaction

Cognitive and affective variables of doctor	Study			
	Friis	**Johnston**	**Bertakis**	**Hill**
Satisfaction with encounter	-	-	-	-
Doctor feeling stressed	-	-	-	-
Perception of patient's adherence	-	-	-	-
Perception of patient's degree of medical control	-	-	-	-
Doctor's skill at decoding body movements	-	-	-	-
Doctor's skills at decoding positive cues to emotion	-	-	-	-
Doctors intention to communicate positive emotion but actually communicates negative emotion	-	-	-	-
Empathy	-	-	-	-
Courtesy	-	-	-	-
Perceived health status	-	-	0	-
Doctor's perception of relationship	-	-	-	-
Expression of affiliativeness	-	-	-	-
Affect	-	-	-	-

Coding frame: - = Not examined 0 = No association

Appendix Five continued

Cognitive and affective variables of the doctor that have been examined for an association with patient satisfaction

Cognitive and affective variables of doctor	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Satisfaction with encounter	-	-	x(+)	-
Doctor feeling stressed	-	-	-	-
Perception of patient's adherence	-	-	-	-
Perception of patient's degree of medical control	-	-	-	-
Doctor's skill at decoding body movements	-	-	-	-
Doctor's skills at decoding positive cues to emotion	-	-	-	-
Doctors intention to communicate positive emotion but actually communicates negative emotion	-	-	-	-
Empathy	-	-	-	-
Courtesy	-	-	-	-
Perceived health status	-	-	-	-
Doctor's perception of relationship	x^2	-	-	-
Expression of affiliativeness	-	-	-	-
Affect	-	-	-	-

Coding frame: - = Not examined 0 = No relationship
x(+) = Positive relationship
x^2 = Patients more satisfied with consultations which doctors characterise the doctor-patient relationship as a partnership.

Appendix Five continued

Cognitive and affective variables of the doctor that have been examined for an association with patient satisfaction

Cognitive and affective variables of doctor	Study	
	Butow	**Michie**
Satisfaction with encounter	-	-
Doctor feeling stressed	-	-
Perception of patient's adherence	-	-
Perception of patient's degree of medical control	-	-
Doctor's skill at decoding body movements	-	-
Doctor's skills at decoding positive cues to emotion	-	-
Doctors intention to communicate positive emotion but actually communicates negative emotion	-	-
Empathy	-	-
Courtesy	-	-
Perceived health status	-	-
Doctor's perception of relationship	-	-
Expression of affiliativeness	-	-
Affect	0	-

Coding frame: - = Not examined 0 = No association

Appendix Six

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
Information giving by the doctor	-	x(+)	-	-
High level of non-verbal encouragement	-	-	-	-
Doctor enquires about social situation	x(+)	-	-	-
Doctor provides sense of social continuity	-	-	-	-
Distance between doctor and patient when information gathering	-	-	-	-
Relative number of facilitative responses	-	-	-	-
Absolute number of facilitative responses	-	-	-	-
Increased amount of feedback	-	-	-	-
Active doctor/dominates interview	-	-	-	-
Touch	-	-	-	-
Humour/Shared laughter	-	-	-	-
Patient activity	-	x(+)	-	-
Information seeking by doctor	-	-	-	-
Doctor attentiveness	-	0	-	-
Doctor acquiescence	-	x(+)	-	-
Presumptuousness by doctor or patient	-	0	-	-

Coding frame: - = Not examined 0 = No association x(+) = Positive relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Korsch	**Stiles**	**DiMatteo**	**Fitzpatrick**
Length of consultation	0	-	-	-
Doctor's communication skills	x(+)	-	-	-
Physical attention (eye contact/body positioning)	-	-	-	-
Listening	-	-	-	-
Consultation style	-	-	-	-
Verbal empathy	-	-	-	-
Disclosure of uncertainty by doctor	-	-	-	-
Casual conversation	-	-	-	-
Doctor provides reassurance	-	-	-	x(+)
Patient requests met	-	-	-	-
Ratio of doctor to patient talk	-	-	-	-
Ratio of patient questions to doctor response to questions	-	-	-	-
Number of abnormality words used	-	-	-	-
Clear explanations	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Information giving by the doctor	-	x(+)	-	-
High level of non-verbal encouragement	x(+)	-	-	-
Doctor enquires about social situation	x(+)	-	-	-
Doctor provides sense of social continuity	x(+)	-	-	-
Distance between doctor and patient when information gathering	x(-)	-	-	-
Relative number of facilitative responses	x(-)	-	-	-
Absolute number of facilitative responses	x(-)	-	-	-
Increased amount of feedback	x(-)	-	-	-
Active doctor/dominates interview	x(-)	-	-	x(-)
Touch	-	0	-	-
Humour/Shared laughter	0	0	-	-
Patient activity	0	-	-	-
Information seeking by doctor	-	-	-	-
Doctor attentiveness	-	-	-	-
Doctor acquiescence	-	-	-	-
Presumptuousness by doctor or patient	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Weinberger	**Comstock**	**Bartlett**	**Buller**
Length of consultation	-	x(+)	-	0
Doctor's communication skills	-	-	-	x(+)
Physical attention (eye contact/body positioning)	-	0	-	-
Listening	-	x(+)	-	-
Consultation style	-	-	-	-
Verbal empathy	-	-	-	-
Disclosure of uncertainty by doctor	-	-	-	-
Casual conversation	-	-	-	-
Doctor provides reassurance	-	-	-	-
Patient requests met	-	-	-	-
Ratio of doctor to patient talk	-	-	-	-
Ratio of patient questions to doctor response to questions	-	-	-	-
Number of abnormality words used	-	-	-	-
Clear explanations	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Friis	**Johnson**	**Bertakis**	**Hill**
Information giving by the doctor	-	-	x(+)	x(+)
High level of non-verbal encouragement	-	-	-	-
Doctor enquires about social situation	-	-	x(+)	x(+)
Doctor provides sense of social continuity	-	-	-	-
Distance between doctor and patient when information gathering	-	-	-	-
Relative number of facilitative responses	-	-	-	-
Absolute number of facilitative responses	-	-	-	-
Increased amount of feedback	-	-	-	-
Active doctor/dominates interview	-	-	x(-)	-
Touch	-	-	-	-
Humour/Shared laughter	-	-	-	-
Patient activity	-	-	x(+)[1] x(-)	-
Information seeking by doctor	-	-	x(-)	-
Doctor attentiveness	-	-	-	-
Doctor acquiescence	-	-	-	x(+)
Presumptuousness by doctor or patient	-	-	-	-

Coding frame: - = Not examined 0 = No association x(+) = Positive relationship
x(-) = Inverse relationship
x[1] = Positive association with patient satisfaction if talk about psychosocial issues. Negative association if talk about biomedical issues.

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Friis	**Johnson**	**Bertakis**	**Hill**
Length of consultation	-	-	-	-
Doctor's communication skills	-	-	-	-
Physical attention (eye contact/body positioning)	-	-	-	-
Listening	-	-	-	-
Consultation style	-	-	-	-
Verbal empathy	-	-	-	x(+)
Disclosure of uncertainty by doctor	-	x(-)	-	-
Casual conversation	-	-	-	-
Doctor provides reassurance	-	-	-	-
Patient requests met	-	-	-	-
Ratio of doctor to patient talk	-	-	-	-
Ratio of patient questions to doctor response to questions	-	-	-	-
Number of abnormality words used	-	-	-	-
Clear explanations	-	-	-	x(+)

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Information giving by the doctor	-	-	0	-
High level of non-verbal encouragement	-	-	-	-
Doctor enquires about social situation	-	-	-	-
Doctor provides sense of social continuity	-	-	-	-
Distance between doctor and patient when information gathering	-	-	-	-
Relative number of facilitative responses	-	-	-	-
Absolute number of facilitative responses	-	-	-	-
Increased amount of feedback	-	-	-	-
Active doctor/dominates interview	-	-	-	-
Touch	-	-	-	-
Humour/Shared laughter	-	-	x(+)	-
Patient activity	-	-	-	-
Information seeking by doctor	-	-	-	-
Doctor attentiveness	-	-	-	-
Doctor acquiescence	-	-	-	-
Presumptuousness by doctor or patient	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study			
	Anderson	**Hall**	**Greene**	**Kenny**
Length of consultation	0	-	x(+)	x(+)
Doctor's communication skills	-	-	-	-
Physical attention (eye contact/body positioning)	-	-	-	-
Listening	-	-	-	-
Consultation style	-	-	-	-
Verbal empathy	-	-	-	-
Disclosure of uncertainty by doctor	-	-	-	-
Casual conversation	-	-	0	-
Doctor provides reassurance	-	-	-	-
Patient requests met	-	-	-	x(+)
Ratio of doctor to patient talk	-	-	-	-
Ratio of patient questions to doctor response to questions	-	-	-	-
Number of abnormality words used	-	-	-	-
Clear explanations	-	-	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study	
	Butow	**Michie**
Information giving by the doctor	-	-
High level of non-verbal encouragement	-	-
Doctor enquires about social situation	-	0
Doctor provides sense of social continuity	-	-
Distance between doctor and patient when information gathering	-	-
Relative number of facilitative responses	-	-
Absolute number of facilitative responses	-	-
Increased amount of feedback	-	-
Active doctor/dominates interview	-	-
Touch	-	-
Humour/Shared laughter	-	-
Patient activity	-	-
Information seeking by doctor	-	-
Doctor attentiveness	-	-
Doctor acquiescence	-	-
Presumptuousness by doctor or patient	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Six continued

Process variables examined for an association with patient satisfaction

Process variables	Study	
	Butow	**Michie**
Length of consultation	0	-
Doctor's communication skills	-	-
Physical attention (eye contact/body positioning)	-	-
Listening	-	-
Consultation style	0	-
Verbal empathy	-	-
Disclosure of uncertainty by doctor	-	-
Casual conversation	0	-
Doctor provides reassurance	-	-
Patient requests met	-	-
Ratio of doctor to patient talk	0	-
Ratio of patient questions to doctor response to questions	0	-
Number of abnormality words used	-	0
Clear explanations	-	-

Coding frame: - = Not examined 0 = No association
x(+) = Positive relationship x(-) = Inverse relationship

Appendix Seven

Contextual variables that have been examined for an association with doctor satisfaction

Contextual variables / Study	**Cartwright**	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arborelius and Bremberg**	**Suchman et al**
Number of items prescribed	x(-)	-	-	-	-	-
Number of months participants known to each other	-	0	-	-	-	-
Patients seen outside clinic	-	0	-	-	-	-
Medical and social continuity	-	0	-	-	-	-
Doctor on call	-	x(-)[1]	-	-	-	-
Time of appointment (a.m./p.m.)	-	-	x(-)[2]	-	-	-
Active disease	-	-	0	-	-	-
Number of symptoms	-	-	-	0	-	-
Newness of symptoms	-	-	-	0	-	-
Duration of symptoms	-	-	-	0	-	-
Physical examination occurred	-	-	-	x(+)	-	-
Prescription given	-	-	-	x(+)	-	-
Number of previous visits	-	-	-	-	-	x(+)[3]

Coding frame- = Not examined 0 = No association x(-) = Inverse relationship x(+) = Positive relationship
x(-)[1] = If doctor on call then less satisfied x(-)[2] = If appointment later in the day, doctor less satisfied
x(+)[3] = An association with the relationship dimension

Appendix Eight

Demographic variables examined for an association with doctor satisfaction

Demo-graphic variables	Study					
	Cartwright	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arborelius and Bremberg**	**Suchman et al**
Patient						
Age	-	-	-	0	-	0
Gender	-	-	-	0	-	0
Race	-	-	-	-	-	x^1
Income level	-	-	-	-	-	0
Doctor						
Age	-	-	-	-	-	$x(+)^2$
Gender	-	-	-	-	-	0
Seniority	-	0	-	-	-	0

Coding frame - = Not Examined
0 = No Association
x^1 = Doctors less satisfied with "coloured" patients on the data dimension
$x(+)^2$ = Older doctors more satisfied on the data dimension

Appendix Nine

Cognitive and affective variables of the patient that have been examined for an association with doctor satisfaction

Cognitive and affective variables	Study					
	Cartwright	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arborelius and Bremberg**	**Suchman et al**
Satisfaction with the consultation	-	-	x(+)	0	-	-
Symptom familiarity	-	-	-	0	-	-
Depression	-	-	x(-)	-	-	-
Anxiety	-	-	0	-	-	-

Coding frame
- = Not Examined
0 = No Association
x(+) = Positive association
x(-) = Inverse association

Appendix Ten

Cognitive and affective variables of the doctor that have been examined for an association with doctor satisfaction

Cognitive and affective variables	Study					
	Cartwright	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arborelius and Bremberg**	**Suchman et al ***
Doctor feeling pressed	-	x(-)	-	-	-	-
Perception of patient's adherence to treatment regimen	-	x(+)	-	-	-	-
Perception of patient's degree of medical control	-	0	-	-	-	-
Perception of patient as:						
depressed	-	-	x(-)	-	-	$x(-)^1$
anxious	-	-	x(-)	-	-	$x(-)^2$
assertive	-	-	-	-	-	$x(-)^2$
worried	-	-	-	-	-	$x(-)^2$
friendly	-	-	-	-	-	$x(+)^3$
irritated	-	-	-	-	-	0
interested	-	-	-	-	-	$x(+)^4$
physically healthy	-	-	-	-	-	$x(+)^5$
emotionally healthy	-	-	-	-	-	$x(-)^6$

Coding frame - = Not examined 0 = No association x(+) = Positive association x(-) = Inverse association
$x(-)^1$ = inverse association with relation and data subscale
$x(-)^2$ = inverse association with demand subscale
$x(+)^3$ = positive association with demand, time and relation subscales
$x(+)^4$ = positive assocation with data, time and relation subscales
$x(+)^5$ = positive assocation with time subscale
$x(-)^6$ = inverse assocation with demand subscale

* Suchman et al had four factors in their scale: Relation - satisfaction iwth the quality of the patient doctor relationship
Data - satisfaction with the adequacy of the data collection process Time - satisfaction that time was used appropriately
Demand - satisfaction with the patinet's non-demanding, cooperative nature

Appendix Eleven

Process variables examined for an association with doctor satisfaction with medical consultations

Process variables	Study					
	Cartwright	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arborelius and Bremberg**	**Suchman et al**
Length of consultation	x(-)	0	-	-	-	0
Amount of time patient speaks	x(-)	-	-	-	-	-
Number of questions asked by patient	x(-)		-	-	-	-
Number of problems discussed	x(-)	-	-	-	-	-
Touch	-	0	-	-	-	-
Proximity	-	0	-	-	-	-
Gives feedback	-	0	-	-	-	-
Doctor asks questions about social situation	-	0	-	-	-	-
Provides humour	-	x(+)	-	-	-	-
Number of relative facilitative responses	-	x(+)	-	-	-	-
Number of absolute facilitative responses	-	x(-)	-	-	-	-
Patient activity	-	0	-	-	-	-
Doctor activity	-	x(-)	-	-	-	-
Doctor gives bad news	-	-	x(-)	-	-	-

Coding frame - = Not examined 0 = Not associated x(+) = Positive association
x(-) = Inverse association

Appendix Eleven continued

Process variables examined for an association with doctor satisfaction with medical consultations

Process variables	Study					
	Cartwright	**Weinberger et al**	**Sensky et al**	**Winefield and Murrell**	**Arboreliu s and Bremberg**	**Suchman et al**
Use of open questions	-	-	-	x(+)[1] x(-)[2]	-	-
Explanations	-	-	-	x(-)[1]	-	-
Reflections	-	-	-	x(+)[2]	-	-
Giving instructions	-	-	-	x(+)[2]	-	-
Predictions	-	-	-	x(+)[2]	-	-
Emotional support by doctor	-	-	-	0	-	-
Diagnostic activity by doctor	-	-	-	0	-	-
Informational support by doctor	-	-	-	0	-	-
Patient speech relationship oriented	-	-	-	0	-	-
Patient speech task oriented	-	-	-	0	-	-
Consider other problems	-	-	-	-	0	-
Choose appropriate action	-	-	-	-	0	-
Define reasons for patient's attendance	-	-	-	-	x(+)	-
Achieve a shared under-standing	-	-	-	-	x(+)	-
Involve patient in the management	-	-	-	-	x(+)	-

Coding frame
- = Not examined
0 = Not associated
x(+) = Positive relationship
x(-) = Inverse relationship
x(+)[1] = Diagnostic stage
x(-)[2] = Prescriptive stage

Appendix 12

Questionnaires

This appendix contains copies of the questionnaires completed by participants in the experimental study described in Chapters 13 and 14. The content of the questionnaires has been reproduced, although the layout has been altered slightly to comply with the requirements of the bound thesis.

The questionnaires for patients were printed in CG Times typeface and 14 point size print. Each questionnaire was printed on different colour paper and each pages was numbered consecutively.

The questionnaire for the doctors was printed in smaller type face (10 point) to fit all the questions onto the one page.

Questionnaire 1 Study No. .....

1. Name .....

2. Age ..... 3. Sex .....

4. Have you visited this clinic before? .....

5. If yes, approximately how many times have you visited this clinic before? .....

6. What is your highest level of qualification? Please tick <u>one</u> of the following boxes:

- ☐ None
- ☐ CSE/ GCSE/ O Level
- ☐ Apprenticeship
- ☐ City and Guilds
- ☐ A Level/ Higher
- ☐ HND (Higher National Diploma)
- ☐ Professional Training
- ☐ Degree
- ☐ Higher Degree (MSc/ PhD)
- ☐ Other .....

7. Are you presently:

- ☐ Unemployed
- ☐ Working
- ☐ Housewife
- ☐ Retired
- ☐ Student

8. If you are working, or have ever been employed, please state what you do or used to do:

.....

9. Which of the following groups do you most identify yourself with?

☐ White	☐ Indian
☐ Black: Caribbean	☐ Pakistani
☐ Black: African	☐ Bangladeshi
☐ Black: Other	☐ Chinese

Other (please specify) .....

10. How long have you had diabetes?

..... years ..... months

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately	Very Much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Please make sure you have answered **all** the questions.

In general would you say your health is:

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Excellent

The following statements describe various situations in which you may wish to ask questions. Under the column marked **how confident** please indicate how confident you are that you could ask questions in that situation. If you do not think you could ask questions in that situation put a 0 in the column; if you are extremely confident that you could ask questions in that particular situation write 100 in the column. If you are not sure then you can write any other number, the higher the number, the more confident you feel.

Scale for rating confidence:

0	10	20	30	40	50	60	70	80	90	100
Not at all confident				Moderately confident					Extremely confident	

that I can ask questions in a particular situation.

How confident are you that you can ask questions of the following: **<u>How Confident:</u>**

1. A hospital doctor you have <u>not</u> met before? .....

2. A hospital doctor you have met before? .....

How many questions do you want to ask during your consultation with the doctor today?

.....

Questionnaire 2 Study No. .....

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately	Very Much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Please make sure you have answered **all** the questions.

The following statements describe various situations in which you may wish to ask questions. Under the column marked **how confident** please indicate how confident you are that you could ask questions in that situation. If you do not think you could ask questions in that situation put a 0 in the column; if you are extremely confident that you could ask questions in that particular situation write 100 in the column. If you are not sure then you can write any other number, the higher the number, the more confident you feel.

Scale for rating confidence:

0	10	20	30	40	50	60	70	80	90	100
Not at all confident					Moderately confident					Extremely confident

that I can ask questions in a particular situation.

How confident are you that you can ask questions of the following: **How Confident:**

1. A hospital doctor you have not met before? .....

2. A hospital doctor you have met before? .....

How many questions do you want to ask during your consultation?

.....

Questionnaire 3 Study No. .....

1. How anxious did you feel during the consultation?

Not at all anxious
0 1 2 3 4 5 6 7
Extremely anxious

2. How many questions do you think you asked during your consultation?

.....

3. How much did you understand of what the doctor said to you?

- ☐ Nothing at all
- ☐ A little
- ☐ Quite a lot
- ☐ Almost everything
- ☐ Absolutely everything

4. How satisfied are you with the information you received during the consultation?

Not at all satisfied
0 1 2 3 4 5 6 7
Extremely satisfied

5. Overall, would you say that the consultation was as you expected?

- ☐ No, it was better
- ☐ Yes
- ☐ No, it was worse

6. Overall, how satisfied are you with the consultation?

Not at all satisfied							Extremely satisfied
0	1	2	3	4	5	6	7

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately	Very Much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Please make sure you have answered **all** the questions.

The following statements describe various situations in which you may wish to ask questions. Under the column marked **how confident** please indicate how confident you are that you could ask questions in that situation. If you do not think you could ask questions in that situation put a 0 in the column; if you are extremely confident that you could ask questions in that particular situation write 100 in the column. If you are not sure then you can write any other number, the higher the number, the more confident you feel.

Scale for rating confidence:

0	10	20	30	40	50	60	70	80	90	100
Not at all confident					Moderately confident					Extremely confident

that I can ask questions in a particular situation.

How confident are you that you can ask questions of the following: **<u>How Confident:</u>**

1. A hospital doctor you have <u>not</u> met before? .....

2. A hospital doctor you have met before? .....

Questionnaire 4 Study No. .....

Thank you for completing the previous questionnaires in this study. We would be grateful if you would now complete the final questionnaire.

Date: .....

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the most appropriate number to the right of the statement to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately	Very Much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Please make sure you have answered **all** the questions.

The following statements describe various situations in which you may wish to ask questions. Under the column marked **how confident** please indicate how confident you are that you could ask questions in that situation. If you do not think you could ask questions in that situation put a 0 in the column; if you are extremely confident that you could ask questions in that particular situation write 100 in the column. If you are not sure then you can write any other number, the higher the number, the more confident you feel.

Scale for rating confidence:

0	10	20	30	40	50	60	70	80	90	100
Not at all confident					Moderately confident					Extremely confident

that I can ask questions in a particular situation.

How confident are you that you can ask questions of the following: **<u>How Confident:</u>**

1. A hospital doctor you have <u>not</u> met before? .....

2. A hospital doctor you have met before? .....

Please try to think back to your last appointment at the diabetic clinic on

..... and indicate how you feel about the consultation.

1. Overall, how satisfied were you with that consultation?

Not at all satisfied							Extremely satisfied
0	1	2	3	4	5	6	7

2. In general would you say your health is:

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Excellent

3. How well controlled do you feel your diabetes has been recently?

Very poorly controlled							Very well controlled
0	1	2	3	4	5	6	7

Questionnaire for Doctors

Study No: .....

Please circle the number which best describes how you feel about the consultation with the patient you have just seen.

1. How anxious did the patient seem to be?

Not at all anxious — Extremely anxious

0 1 2 3 4 5 6 7

2. How angry did the patient seem to be?

Not at all angry — Extremely angry

0 1 2 3 4 5 6 7

3. How involved did the patient seem to be in the consultation?

Not at all involved — Extremely involved

0 1 2 3 4 5 6 7

4. How much of what you said do you think this patient understood?

- ☐ Nothing at all
- ☐ A little
- ☐ Quite a lot
- ☐ Almost everything
- ☐ Absolutely everything

5. How well do you think this patient will comply with any advice you gave during the consultation?

Will not comply — Will complycompletely

0 1 2 3 4 5 6 7

No advice given - not applicable ☐

6. Did the consultation meet your expectations?

- ☐ **No, it was better**
- ☐ **Yes**
- ☐ **No, it was worse**

If No, please indicate why the consultation was better or worse than you expected:

.....

.....

7. How satisfied are you with this consultation?

Extremely dissatisfied							Extremely satisfied
0	1	2	3	4	5	6	7

Appendix 13

Intervention 2: Question Identification

Thank you for agreeing to take part in the study. As I said before, I'm going to spend about five minutes with you before you go in to see the doctor. I'd like to assure you that this discussion will not make you late for your appointment, as I have asked the nurse to let me know when the doctor is ready to see you.

I would also like to stress that everything that you say to me will be completely confidential.

The aim of this study is to help patients to get the information they want from their doctor.

Getting the information you want is important as it can help you to manage your diabetes. Most people have some questions about their diabetes but they often don't ask them. This may be because they think that the doctors are too busy, or because they feel their questions are silly.

But doctors are a good source of information and they know that patients need to ask all sorts of questions to help them with their diabetes.

So what I'd like to do now is to ask you if you might have any questions that you'd like to ask the doctor today? You might want to ask about your treatment, your diagnosis, or anything related to the problem you have with diabetes.

Can you think of anything you'd like to know?
Is there anything that you feel a bit unsure about?

<u>If "yes":</u> I'd like you to tell me what questions you'd like to ask.

You've identified (number) questions you'd like to ask and they are..... (researcher repeats the questions and writes them down).

<u>If "no":</u> You say you can't think of any questions you'd like to ask the doctor. Is there anything you'd like to know a bit more about?

The following closed questions were then used as prompts:

- Are you on any treatment at present for your diabetes?
- Do you have to take any tablets? What are they called? Can you remember when you have to take them?
- Are you clear about your diet? Would you like to know anything else about the diet?
- Have you been advised to lose any weight? Can you remember how much weight you need to lose? Do you know how long you've got to lose it?
- Do you smoke? Have you ever been given and advice about smoking? Would you like

to ask for further help in cutting down the number of cigarettes you smoke?
- Do you know the cause of your problem?
- Do you know how long you will have the problem?

At the end of the prompts the researcher repeated any questions identified by the patient and wrote them down, or agreed with the patient that they seemed to have no questions to ask.

At the end of the intervention the researcher said. "That is all we've got to do just now, but I'd like you to complete this questionnaire before you go back to the waiting room. I'll speak to you again briefly after you've seen the doctor to give you the next questionnaire.

Thanks again for taking part in the study.

Bye for now.

Appendix 14

Intervention 3: Question Identification and Rehearsal

Thank you for agreeing to take part in the study. As I said before, I'm going to spend about five minutes with you before you go in to see the doctor. I'd like to assure you that this discussion will not make you late for your appointment, as I have asked the nurse to let me know when the doctor is ready to see you.

I would also like to stress that everything that you say to me will be completely confidential.

The aim of this study is to help patients to get the information they want from their doctor.

Getting the information you want is important as it can help you to manage your diabetes. Most people have some questions about their diabetes but they often don't ask them. This may be because they think that the doctors are too busy, or because they feel their questions are silly.

But doctors are a good source of information and they know that patients need to ask all sorts of questions to help them with their diabetes.

So what I'd like to do now is to ask you if you might have any questions that you'd like to ask the doctor today? You might want to ask about your treatment, your diagnosis, or anything related to the problem you have with diabetes.

Can you think of anything you'd like to know?
Is there anything that you feel a bit unsure about?

<u>If "yes":</u> I'd like you to tell me what questions you'd like to ask.

You've identified (number) questions you'd like to ask and they are..... (researcher repeats the questions and writes them down).

<u>If "no":</u> You say you can't think of any questions you'd like to ask the doctor. Is there anything you'd like to know a bit more about?

The following closed questions were then used as prompts:

- Are you on any treatment at present for your diabetes?
- Do you have to take any tablets? What are they called? Can you remember when you have to take them?
- Are you clear about your diet? Would you like to know anything else about the diet?
- Have you been advised to lose any weight? Can you remember how much weight you need to lose? Do you know how long you've got to lose it?
- Do you smoke? Have you ever been given and advice about smoking? Would you like

to ask for further help in cutting down the number of cigarettes you smoke?
- Do you know the cause of your problem?
- Do you know how long you will have the problem?

At the end of the prompts the researcher repeated any questions identified by the patient and wrote them down, or agreed with the patient that they seemed to have no questions to ask.

Now that you've thought of some questions you'd like to ask, I'd like you to practice saying them out loud. I know this may sound a bit silly but I've spoken to many patients who have told me that although they went into a consultation with the intention of asking several questions they were not able to. One of the ways of getting round this problem is by repeating the questions out loud so that they will not be forgotten in the consultation, and you can get used to the sound of your voice asking the questions.

So what was your first question?.....

Well done.

This was repeated until all the identified questions had been rehearsed.

At the end of the intervention the researcher said. "That is all we've got to do just now, but I'd like you to complete this questionnaire before you go back to the waiting room. I'll speak to you again briefly after you've seen the doctor to give you the next questionnaire.

Thanks again for taking part in the study.

Bye for now.